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MOTOR BOATING

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The October issue of MoToR BoatinG will be a particularly interesting number from the standpoint of everyone interested in boats or motor boating. The biggest regattas of the year take place during the next few weeks. The races at the Thousand Islands, those at Toronto and the big regatta at Detroit for the Gold Cup, the One-Mile Championship, the Fisher Trophy Race and the Scripps Cruiser Championship will all be held. The complete story of all these races, fully illustrated, will be published in the October number of MoToR BoatinG. Other important events will not be neglected.

The usual features which have made MoToR BoatinG so popular will, of course, be published. William H. Hand, Jr., has designed for us a particularly excellent boat, complete plans and full specifications of which will be published in October. Our Small Boat Department will contain a number of most valuable articles dealing with the best type of boat for an amateur to purchase, solving the problem of supplying fuel to the motor, keeping a hot bearing in service, etc.

As MoToR BoatinG's circulation is all "Paid in Advance Circulation," it will be well for you to order your copy of October MoToR BoatinG now in order to be sure of obtaining one.

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Advertising Index will be found on page 142

MOTOR BOATING

THE BEST EVER

AMERICA NOW SUPREME ON LAND AND SEA—A GLORIOUS BOATING SEASON—THE BEST RACING EVENT STILL TO COME—MARINE MOTORS SHOULD BE GIVEN MORE CONSIDERATION

WHAT a wonderful season this has been! With America defeating the world on the sea, both with power- and wind-driven craft, something never before accomplished in a single year has been made a fact. Every motor boat which could claim title to such a name has been in commission and used more than ever before. New craft as well as those with old and familiar names were to be seen in every harbor of consequence. The express cruiser, that type of boat which heretofore has been frowned upon by many of the old-time salts, has worked itself into general favor with every yachtsman. It is a type of boat which has come to stay.

AMERICA WINS WORLD'S SUPREMACY

Gar Wood's win with Miss America, of course, is an accomplishment of the highest order. It brings back to our shores this famous British International Trophy which has been in England since 1912. Two straight wins by the American team did the trick. Unfortunately, Commodore Judson's Whip-po'-Will, Jr., the third member of the American team, burned and sank in 100 feet of water just previous to the race. Whip could not be raised and therefore could not compete. Otherwise, the American boats might have finished one, two, three.

MARINE MOTORS STILL HOLD RECORD

The speeds made in the British International Races again demonstrated the fallacy in believing that phenomenal speeds are required and that an aviation motor is necessary to win important hydroplane races. There are several strictly marine motors built in this country today which we are sure would have driven a hydroplane as fast as any of those which raced at Cowes. American marine motors have reached a condition of perfection where power and reliability may be counted on. It is a fact that the speed record for the Gold Cup, both for one heat of 30 miles and an entire race of 90 miles, is still held by a boat powered with a Sterling marine motor.

GREAT REGATTA AT DETROIT

The Detroit yachtsmen, including members of the Detroit Yacht Club, The Miss Detroit Power Boat Association and other Detroit clubs, have planned a regatta to be held on the Detroit River, September 11th to 14th, which promises to be the greatest event of its kind ever held in America. It will pay motor boatmen and all those interested in racing going a long way to see. Without doubt Miss America and Miss Detroit, which raced in England, will compete for the Gold Cup. Several new hydroplanes are also building for this race, and new speed records for all distances from 5 to 90 miles should be established.

FIRST RACE FOR FISHER TROPHY

The first series of races for the Carl G. Fisher Trophy representing the A. P. B. A. Displacement Boat Championship of America will be held at Detroit, September 11th, 13th and 14th. Three 50-mile heats will be held. This is an event, it will be remembered, which is open to displacement boats powered with stock marine motors and no repairs on hulls, power plants or accessories, are allowed between the start of the first race and the finish of the 150 miles. Without doubt consistency and not extreme speed will win. In addition to the motor requirements there are certain conditions in regard to the hull which must be lived up to.

RIGHT BOAT IS CRUISER CHAMPION

Victory II deserved to win the title of A. P. B. A. Handicap Cruiser Champion. She is in every sense a typical all-round cruiser. Her owner, Commodore H. A. Jackson, is also a real boatman, if there ever was one. The trophy stays at the N. Y. A. C., one of America's foremost racing organizations, made so by its commodore, H. M. Williams, and its Race Committee.

Photo—Pirie MacDonald

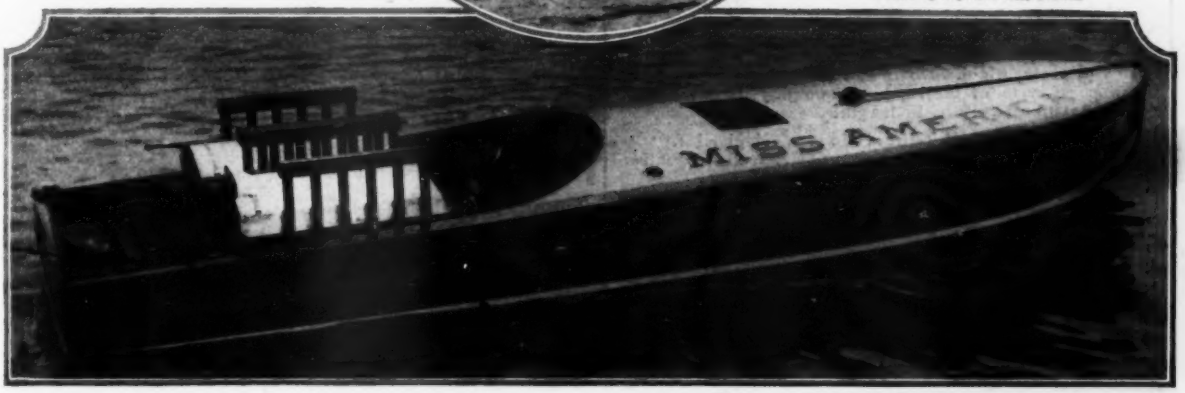
COMMODORE ALBERT L. JUDSON

One of America's Leading Motor Boatman

Besides being president of the America Power-Boat Association, Commodore Judson recently reorganized the Motor Boat Club of America and made it possible to send the team to England which has just won the British International Trophy for America and thus placed to the credit of this country another sport in which we excel the world. Commodore Judson is a member of the New York Yacht Club, the Lake George Club and also Commodore of the Lake George Regatta Association. He has been owner of a number of fast racing boats but a jinx seems to have always followed him as hard luck has always cost him a place among the winners. His latest misfortune was the burning and sinking of Whip-po'-Will, Jr., in England only a few days before the start of the International races. However, there never was a truer sportsman than Commodore Judson, and he was the first one to send Gar Wood his congratulations for the wonderful win of Miss America at Cowes on August tenth and eleventh

Miss America, the world champion, under way and at rest. Her best speed was at the rate of 65.1 miles per hour for one lap of 7.6 statute miles

Photos by Topical Press, London



America Wins Motor Boat Supremacy

Garfield A. Wood with His Two American Challengers, Miss America and Miss Detroit V, Have Little Trouble in Defeating Three English Boats in Two Straight Heats for the British International Trophy, Making Record Speed—Next Race to be Held in America

By W. F. Bradley

MoToR BoatinG's Representative at the International Races

MISS AMERICA is bringing home with her the British International Trophy which since 1912 has been held by Great Britain. She won this highest trophy of the motor boat world in the two matches run off the Isle of Wight, on August 10th and 11th, against the best that England's designers and sportsmen could produce.

America, France and Spain officially entered as challengers for the cup which has been defended by England since Maple Leaf IV took it back to England in 1912. France built two boats, tested them out, found that their speed was too low, and decided to withdraw them. The Spanish challenger never got beyond the paper stage. America sent across the Atlantic two boats built in the Smith yards at Algonac, Miss Detroit V and Miss America, owned respectively by Master Gar. Wood, Jr., and Gar. A. Wood, and the racer Whip-po'-Will, Jr., owned by A. L. Judson. Three days before the race, when practising in Osborne Bay, an explosion occurred aboard Whip-po'-Will, Jr., and the fire which followed spread with such rapidity that two of the men aboard had no alternative but to jump into the sea to save their lives. The crew aboard at the time consisted of George Reis, pilot, Henry Pohl, mechanician, and J. F. Kneeshaw, assistant mechanician. No satisfactory explanation can be given for this disaster, but judging from the rapidity with which the flames spread it is probable that there was a leakage of gasoline. Gar. Wood, who was out at the time with Miss America, picked up Reis and Pohl, while Kneeshaw who had remained on the bows of the boat, was taken off by a passing motorboat. Whip-po'-Will, Jr., burned to the water's edge and then disappeared.

This accident cut the American team down to two boats to meet the three British defenders: Sunbeam-Despujols, Maple Leaf V, and Maple Leaf VI. Although the rules calling for the complete construction of each boat in the country it represented had been strictly observed, Sunbeam-Despujols was of French origin. She had been built in France by Victor Despujols, and had taken part in the Monaco races with conspicuous success. After this event the boat was sent to England and an identical hull built in the Sunbeam shops at Wolverhampton, and the Sunbeam 12-cylinder 450 horsepower aviation motor put into it.

Not much was known before the race of the two Maple Leafs. Both had been built by Saunders, of Cowes, and one of them had received four Sunbeam engines, giving a total horsepower of 1800, while the other had two Rolls-Royce engines of 1100 horsepower. A request to Saunders, two days before the race, to be allowed to examine the boats, brought forth the blunt reply that nobody should be allowed to see them until after the race. As events proved, nobody was likely to want to see them then, except as examples of how not to build hulls.

The start of the race was poor. When the last of the five balls remained, the five boats were cruising about several hundred yards to the west of the starting line, but not

At the left: Miss Detroit V, America's 38-foot challenger, which ran second to Miss America

Below: Maple Leaf V, England's hope which was powered with four motors totalling 1,800 h.p. but which showed that America was many years ahead of the rest of the world in hydroplane design and construction

Photos by Topical Press, London

Winners of Past Races for B. I. Trophy

The British International Trophy was presented by Lord Northcliffe in 1903 for International competition between teams of three boats representing the countries of their origin. No limit is placed on the horse-power or form of motive-power employed, but boats must not exceed 40-ft. in length.

1903	Great Britain.....	Napier I
1904	France	Trefle-a-Quatre
1905	Great Britain.....	Napier II
1906	"	Yarrow-Napier
1907	United States.....	Dixie
1908	"	Dixie II
1909	No Race	
1910	United States.....	Dixie II
1911	"	Dixie IV
1912	Great Britain.....	Maple Leaf IV
1913	"	Maple Leaf IV
1914-1919	No Race	
1920	United States.....	Miss America

one of them broke away for the expected rush which should have brought them over as the starting gun was fired. Maple Leaf V, with the aviator Harry G. Hawker at the wheel, was the first to cut the line, followed by George B. Wood on Miss Detroit, Gar. Wood on Miss America, Col. Tate on Maple Leaf VI, with Sir Algernon Lee Guinness on Sunbeam-Despujols a very long way in the rear.

Within a couple of minutes Miss Detroit had forged ahead of Maple Leaf V, and when half of the 6.6-mile course had been covered Miss America had taken the lead from her big sister by only a few yards, with Maple Leaf in third place, the second Saunders boat in fourth position and Sunbeam-Despujols a long way in the rear. There had been so little opportunity of seeing the boats at practice, that their performance in the race was watched with the keenest interest by the experts and officials aboard H.M.S. Alresford, acting as committee vessel.

Admiration was unbounded at the way the two American boats skimmed over the water without any fuss, without any pounding, and with the minimum disturbance of water. But the greatest surprise of all was the way the two United States boats went around the buoys. While the best of the Britishers threw up a rudder wave twenty feet high, the American craft slipped round with no trace of a wave, and even had they been no faster than their rivals on the straightway, they could have won by reason of this feature only.

In contrast with these, the Saunders-built Maple Leaf VI advanced with a long series of bounds which were variously described as "rocking horse motion," "kangaroo leaps," and "speeding hound." The sea in Osborne Bay was calm with a fresh breeze; had the water been at all rough, it is certain that this boat would have broken its back before the 33-mile race had been run. The pounding appeared to occur at irregular intervals of thirty to fifty seconds, when the whole forward portion of the boat came out of the water and pounded down most violently, throwing up a wave on each side fifty or sixty feet high.

Maple Leaf V being very much better, although making quite a fuss compared with Miss America, it is to be assumed that the kangaroo motion is attributable to a considerable extent to incorrect distribution of weight. Maple Leaf V had two of her Sunbeam engines amidships and two completely astern, while her sister boat had her two Rolls-Royce engines placed amidships, or almost directly over the step. The only comment regarding Sunbeam-Despujols, the lowest-powered boat in the race, is that she was lacking speed.

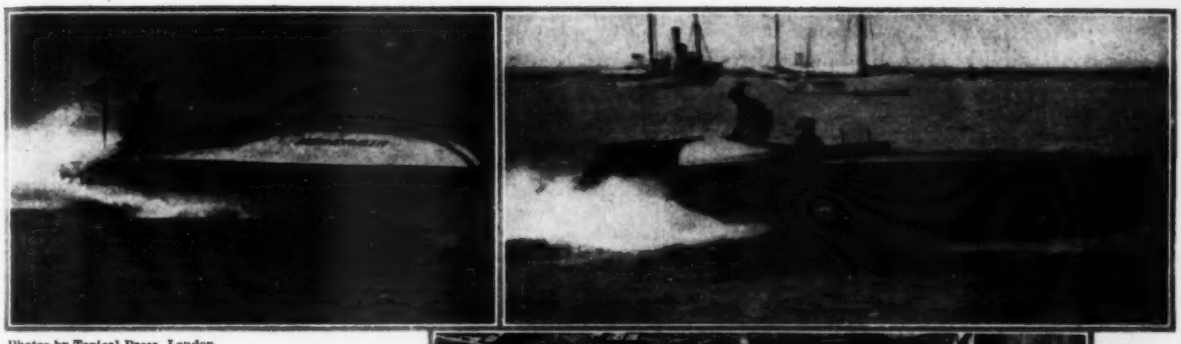
With the end of the first lap Miss America had secured a substantial lead, but Miss Detroit, with her engines misfiring, had dropped back and allowed Hawker, with his Saunders-Sunbeam combination to get into second place. Although Miss America had immediately impressed the spectators, there was a feeling that she was going to be seriously troubled by Hawker, who had 1800 horsepower at his disposal, compared with only half that amount on the American craft. Gar. Wood seemed to share this feeling, for during the second round of the course he kept the throttle nearly wide open and covered the 6.6 sea miles in 7 min. 1 3/5 sec. This done, Gar. Wood had the race in his own hands, and with the exception of the last hundred yards he never called upon Miss America to reveal all the speed she possessed.

After two laps Miss Detroit had fallen down to fourth

COMPLETE SUMMARY OF RESULTS OF THE FIRST RACE FOR THE BRITISH INTERNATIONAL TROPHY

Cowes, England, August 10, 1920. Length of Race, 38.10 Statute Miles. Length of Lap, 7.62 Statute Miles

	Total Time					Time by Laps					Speed by Laps in Statute Miles Per Hour					
Boat	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	Total Race
Miss America.....	7.14 2/5	14.16	21.21 1/5	29.17 1/5	38.34 3/5	7.14 2/5	7.01 2/5	7.05 1/5	7.56	9.17 2/5	63.1	65.1	64.5	57.6	49.3	59.3
Maple Leaf VI.....	8.35	16.45 2/5	24.54	33.03 2/5	41.19 4/5	8.35 2/5	8.10	8.08 3/5	8.00 2/5	8.16 2/5	53.3	55.9	56.1	58.1	55.3	55.3
Sunbeam-Despujols V	8.14 1/5	17.55 1/5	26.30 2/5	35.00 4/5	43.33	8.14 1/5	8.41	8.35 1/5	8.30 2/5	8.32 1/5	49.5	48.9	53.3	53.7	50.6	52.5
Miss Detroit V.....	7.55 2/5	17.42	28.29	37.14 3/5	46.12 3/5	7.55 2/5	9.46 3/5	10.47	8.45 3/5	8.58	57.7	27.7	42.4	52.2	51.1	49.5
Maple Leaf V.....	7.41 4/5	15.01	26.27 1/5	55.35	.....	7.41 4/5	7.19 1/5	11.26 1/5	29.07 4/5	.....	59.5	62.4	40.0	15.6	....	....



Photos by Topical Press, London

Sunbeam-Despujols only an also ran. This boat was an exact duplicate built in England of the French Sunbeam Despujols

Above: Maple Leaf VI called the Kangaroo boat because of her jump when running at full speed

Below: The four motors totaling 1800 *h. p. in Maple Leaf V*

place, and at the end of the following lap was the tail-ender. It appears that her plugs were giving trouble and the boat was being run on one engine while changes were being made. During this time Sunbeam-Despujols the slowest of the five boats in the race, had no difficulty in passing the big American on the straightaways, but as soon as they got on the buoys Miss Detroit went by the Britisher with the greatest ease, to the amazement of the crew on the Despujols boat.

Harry Hawker did not long give chase to Miss America. When half distance had been covered he slowed down perceptibly and allowed the "kangaroo" Maple Leaf to get into second place. His trouble, as discovered later, was a broken scavenger pump, which obliged him to run entirely throttled down and caused him to come home an hour after the winner had crossed the line.

With half the distance covered and Miss America perceptibly playing with her rivals, the only hope in the British fleet was that she would develop mechanical trouble. The black smoke issuing from her exhaust pipes was sure indication that carburetion was not altogether right, and there were grounds for believing that the rich mixture she was drawing into her cylinders might set up the same plug trouble as was holding back Miss Detroit. No such thing happened. Hitting regularly on all twenty-four cylinders, Miss America received the finishing gun in 38 min. 34 3/5 sec., being an average of 51.45 knots, defeating her nearest rival, Maple Leaf VI, with the very substantial margin of 2 min. 45 sec. Miss Detroit got into her stride as soon as she had overcome her plug troubles, but it was then too late to catch up even the Sunbeam-Despujols. Hawker, in his crippled condition, just cruised around the course in order to qualify for the following races.

As Miss America got the winning gun, one of the British owners turned to his friends with the remark: "Gentlemen, let's take our hats off to the Yankees and tell them there will be no race tomorrow." Then like a true sportsman he gave orders to his men which kept them working all night in a desperate effort to get a little more speed out of the boat.

Rushing wildly down onto the starting line, a few seconds before the gun was fired, the start of the second race was as brilliant as the first had been slovenly. Maple Leaf VI literally jumped over as the gun was fired, but Miss America was only half a length behind, and Miss Detroit but three or four lengths in the rear. Maple Leaf V and Sunbeam-Despujols cut the line in fourth and fifth positions. But the Britisher's slight advantage at the outset stood him in no stead against Miss America, which took the lead within 50 yards, and had no difficulty in maintaining it to the end.

When the start was given at 4.30 in the afternoon, the weather was perfect, the sea being dead calm, and the wind so light that the sailing yachts taking part in a Ryde regatta event were becalmed at times. The presence of the big wind jammers added to the picturesqueness of the scene, but it was thought at one time that they would interfere with the regularity of the boat race. Fortunately all the yachts drifted away from the motor boat course just before the start was given.

Although the Englishmen had had to recognize the great superiority of the American craft on the first day, they were not disposed to take a beating lying down, and Maple Leaf V with her 1800 horsepower Sunbeam engines was looked upon as capable of giving the challengers a good run for their money. Unfortunately, from a sporting standpoint, the Britishers never had a look in. Miss America was well to the front before half a lap had been covered, with Miss Detroit 50 yards astern of her, and slightly on the outside, in order to avoid her wash, and Maple Leaf V in third place. Maple Leap VI kangarooed along in fourth position, and the Sunbeam-Despujols, which looked fast

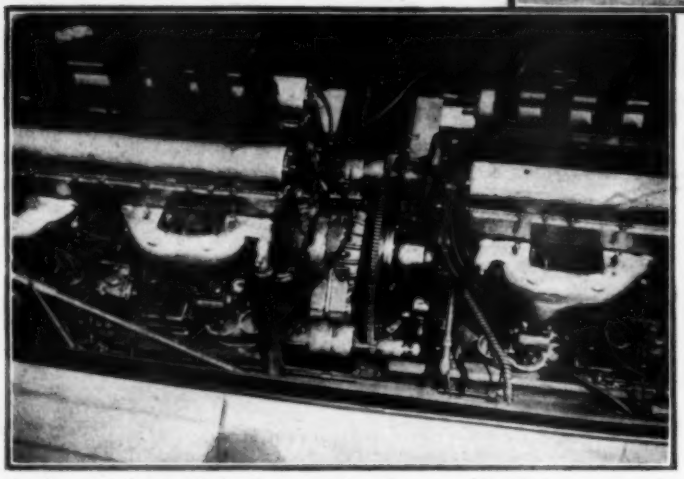
COMPLETE SUMMARY OF RESULTS OF THE SECOND RACE FOR THE BRITISH INTERNATIONAL TROPHY

Cowes, England, August 11, 1920. Length of Race, 38.10 Statute Miles. Length of Lap, 7.62 Statute Miles

	Total Time					Time by Laps					Speed by Laps in Statute Miles Per Hour					
Boat	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	1st Lap	2nd Lap	3rd Lap	4th Lap	5th Lap	Total Race
Miss America.....	7.03	14.46 4/5	22.11 3/5	29.47	37.09 1/5	7.03	7.43 4/5	7.24 4/5	7.35 2/5	7.22 1/5	64.9	60.0	61.6	60.3	62.1	61.5
Miss Detroit V.....	7.27 1/5	14.56	22.28 3/5	30.07	37.43 4/5	7.27 1/5	7.28 4/5	7.32 3/5	7.36 2/5	7.36 4/5	61.4	61.0	60.5	59.9	60.0	60.5
Maple Leaf V.....	7.43 2/5	15.15	22.47 4/5	30.26	37.59	7.43 2/5	7.31 3/5	7.32 4/5	7.38 1/5	7.33	59.3	60.6	60.5	60.0	60.5	60.2
Maple Leaf VI	8.28 4/5	16.37 2/5	24.46 4/5	32.54	40.39 1/5	8.28 4/5	8.09 3/5	8.09 2/5	8.08 1/5	8.05 1/5	53.9	56.0	56.1	56.2	56.6	55.8
Sunbeam-Despujos V	8.59 1/5	16.57	25.05 1/5	33.07 1/5	41.05 1/5	8.59 1/5	8.06 4/5	8.08 1/5	8.02	7.58	51.7	56.2	56.1	57.0	57.4	55.6

when regarded alone, brought up the procession. These positions never changed appreciably until the race was run and Miss America had secured the coveted trophy for the United States, at an average of 53.42 knots, with her sister Miss Detroit running second.

After two rounds of the course had been covered, misfiring was noticed to have developed aboard Miss Detroit, and the black smoke from her exhaust pipes indicated that the mixture was not perfect. The fears, however, that the same plug troubles would develop as on the previous day did not develop, or at any rate not sufficiently to interfere with speed. There was a ray of hope among the defenders when Miss America began



A view of the method of connecting the two 16-cylinder motors in Whip-po'-Will, Jr.

to misfire at about half distance, but this irregularity disappeared, and the lead was increased slightly on the fourth lap, and lost a little on the final round.

On the first day the American boats had been run with closely fitting sheet metal covers over the engines, as a protection against water. It was believed that these shut out too much air and so enriched the mixture, and in consequence they were left off for the second race, as weather conditions did not make them necessary. Sunbeam-Despujols suffered in a lesser degree from the same cause, and although she did not abandon her engine cover, arrangements were made for admitting more air into the engine room.

It was obvious that so far as engines alone were concerned Miss America and Miss Detroit were not as well prepared as the Britishers. Evidently the widely different atmospheric conditions had entirely upset carburetion and there had not been time to get this right. The fact that the boats could win, and win easily, under such conditions, is most wonderful testimony to the genius displayed by the designers and builders of the hulls.

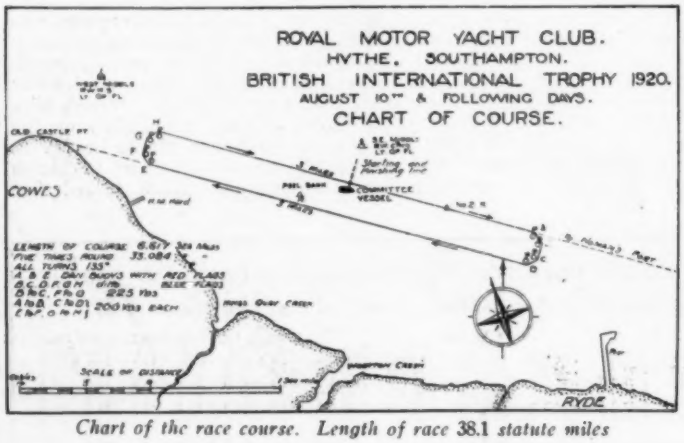


Chart of the race course. Length of race 38.1 statute miles

Photos by Rosenfeld

Whip-po'-Will, Jr., America's third entry, owned by Commodore A. L. Judson of New York, which burned and sank a few days previous to the first race

It had been intended, after the Cup had been won, to send Miss America round the course once for a record breaking spin. Unfortunately this could not be done, for she finished the race with half a dozen of her plugs out of commission.

The crews on the American boats during the races were as follows: Miss America, pilot Gar. A. Wood; mechanicians, Jay Smith and Phil Wood. Miss Detroit V, pilot George B. Wood; mechanicians B. Smith and C. Mericle.

Floating alongside H.M.S. Alresford during the race was a motor tug acting as tender to the

Starters in the Races for the British International Trophy in Osborne Bay, Isle of Wight, England, on August 10th and 11th

CHALLENGERS

1. **Miss Detroit V; owner, G. A. Wood, Jr.; pilot, Geo. B. Wood; 38-ft., hull designed and built by Smith, of Algonac; engines, two Liberty 12-cylinder motors of 400 h.p. each.**
2. **Miss America; owner, G. A. Wood; pilot, G. A. Wood; 26-ft., hull designed and built by Smith, of Algonac; engines, two Liberty 12-cylinder motors of 400 h.p. each.**
3. **Whip-po'-Will, Jr.; owner, A. L. Judson. Burned and sunk in Osborne Bay three days before the race.**

DEFENDERS (British)

4. **Sunbeam-Despujols; owner, Louis Coatalen; pilot, Sir A. Lee Guinness; 26-ft. 3-in., hull designed by Despujols, built by Sunbeam Co.; engines, one Sunbeam 12-cylinder 450 h.p. aviation engine.**
5. **Maple Leaf V; owner, Sir E. Mackay Edgar, Bt.; pilot, Harry G. Hawker; 39-ft., hull designed and built by Saunders of Cowes; engines, four Sunbeam 12-cylinder motors, developing 450 h.p. each.**
6. **Maple Leaf VI; owner, John Fuster Edgar; pilot, Col. A. W. Tate; 39-ft., hull designed and built by Saunders of Cowes; engines, two Rolls-Royce Condor motors, developing 550 h.p. each.**

American boats and having aboard Mrs. Wood and other members of the party, including Master Gar. Wood, Jr., the two-year-old owner of Miss Detroit. The youthful yachtsman, who had been one of the prominent figures on the local picture house screens during the week preceding the race, contentedly sucked an orange as his father's boat came in first and his own craft finished second, and smiled when the British lords came aboard to congratulate him on his first victory.

One-Man Control

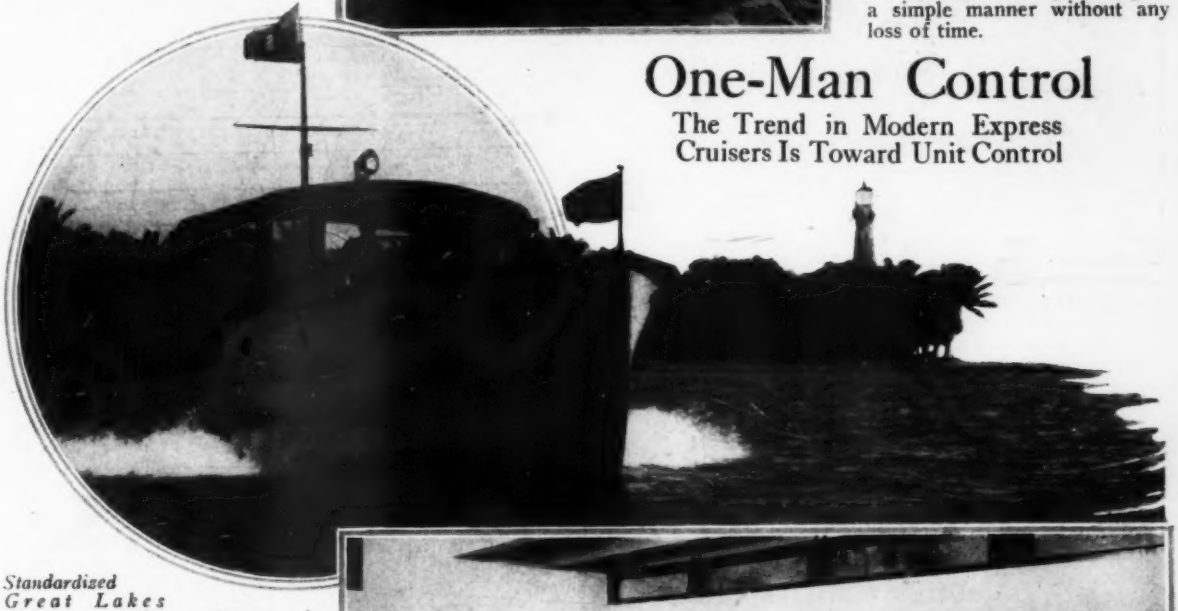
The Trend in Modern Express Cruisers Is Toward Unit Control

THE whole trend of the times in modern express-cruiser construction is toward one-man control of the power plant, whether it be single or twin-screw installation. The pleasure boat industry has followed the automotive practice in designing the controls of the engines, so that the present-day express cruiser handles very much in the same way as the modern automobile.

As the largest builders of express cruisers in America, the Great Lakes Boat Building Corporation has devoted a great deal of attention and has done a great deal of pioneer work in developing dependable controls for handling all power plant operations from the bridge deck. Their engineers take the position that any cruiser from

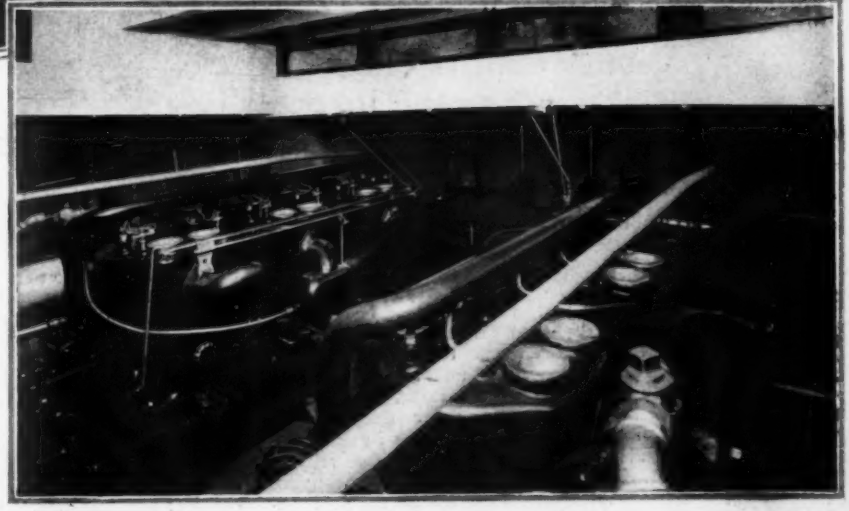
The nerve-center of the modern one-man controlled motor yacht

In order to obtain a one-man-controlled cruiser in every sense of the word it is necessary that the helmsman, or more probably the combination captain-engineer, have directly before him the wheel, compass chart case and searchlight, together with the clutch control for going forward and into reverse, spark and throttle controls on the engine, tachometers showing the speed of the power plant, oil gauges for either one or both engines, as the case may be, air gauges on the gasoline pumps, which are now generally added as an accessory to the engine, ammeters, including charge or discharge of the lighting and starting batteries, and the button for operating the electric horn. It goes without saying that all of these controls, instruments and accessories must be installed in accordance with the highest standards known to the engineering practice, and that, moreover, in each instance the control must work positively in a simple manner without any loss of time.

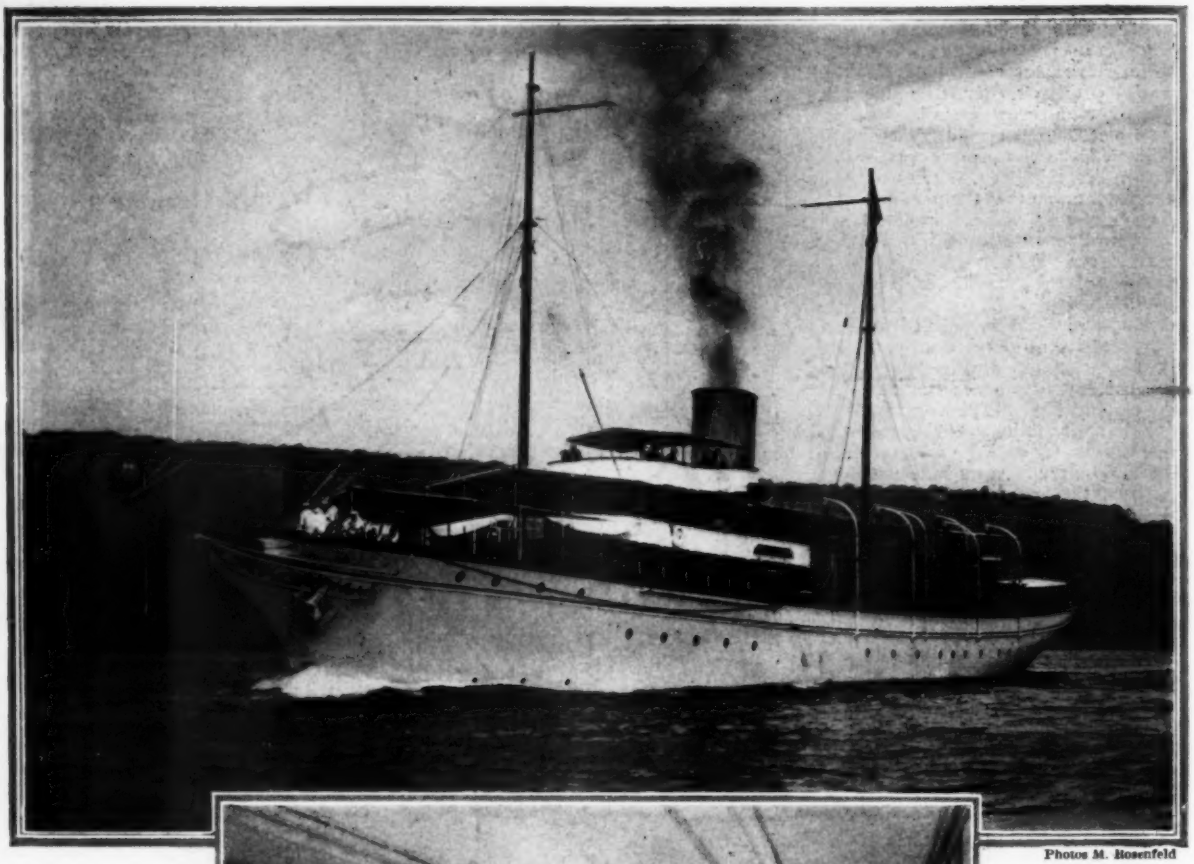


Standardized Great Lakes cruiser, a modern exponent of the one-man control principle

40 to 100 feet in length, powered with modern marine engines, should be handled from the bridge, for two reasons: First, because navigation is made more positive by reason of the fact that the helmsman has direct control over the engines and does not have to depend upon signals, which is a particularly important factor in navigating in close quarters; and that, second, one-man control is desirable from the viewpoint of reducing the number of the crew required, which is not only an expense, but which in these days of labor shortage is a source of a great deal of trouble.

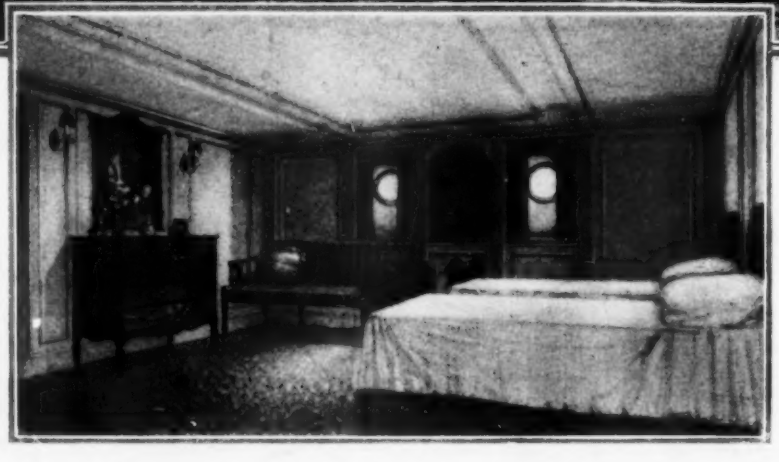


The highly perfected Van Blerck marine motor installation which will run for an indefinite period without the necessity for an attendant watching them continuously



Photos M. Rosenfeld

The world's finest yacht, Lyndonia on the Hudson undergoing trials



The Guests' Staterooms are in Colonial style with mahogany furniture

Lyndonia, the Newest 230-Foot Yacht

A Wonderful Example of the Skill and Craftsmanship of the American Shipbuilder, Strength and Beauty Combined in a Masterpiece

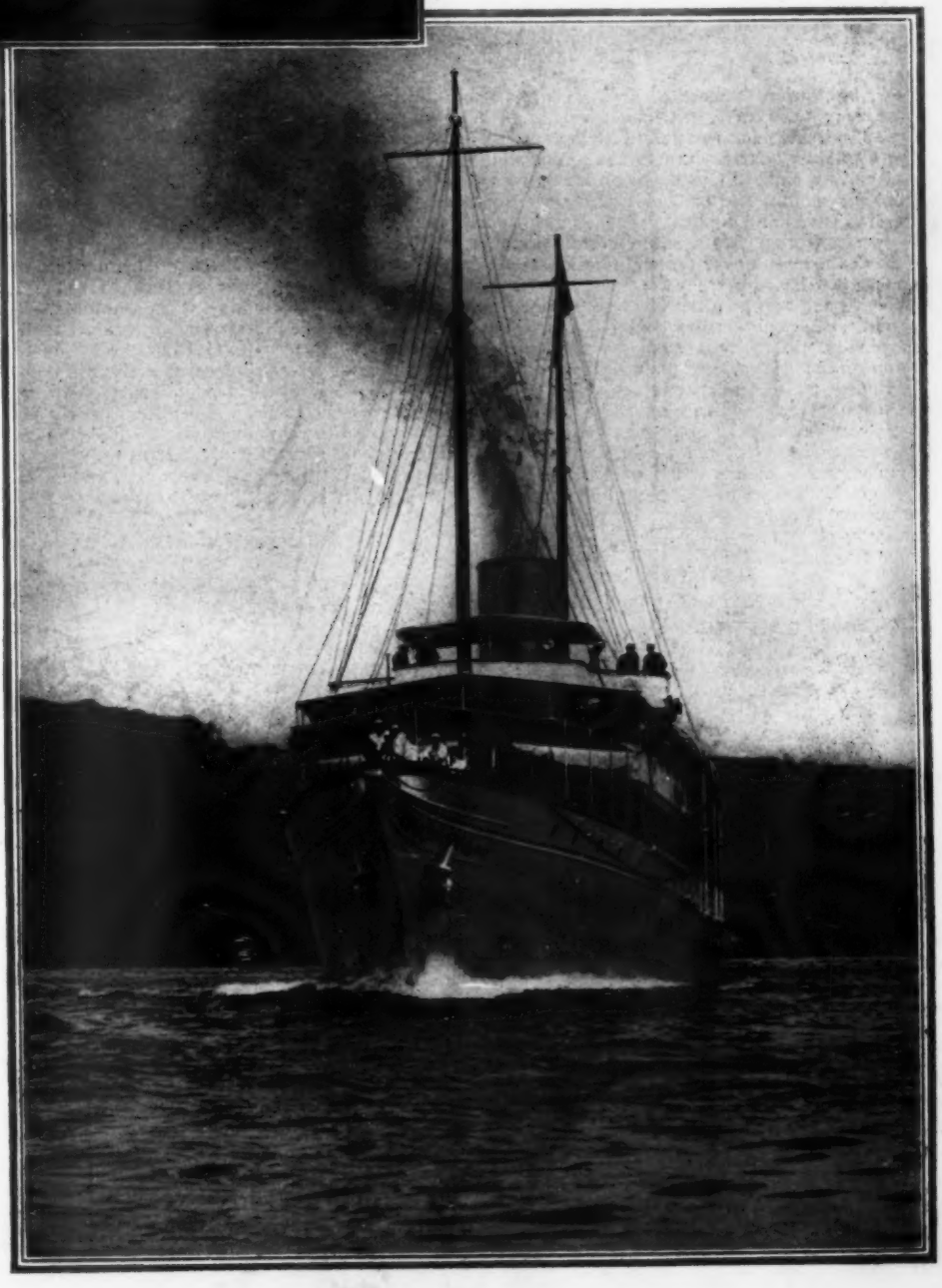
THE new Lyndonia, the greatest and most luxurious yacht afloat, has been delivered. On July 17, shortly before noon, this mammoth pleasure craft, bedecked in glistening colors of white and gold, left her fitting-out docks in the Harlem River and was towed to Spuyten Duyvil. Here she cut loose from her escort and under her own power sailed majestically up the Hudson to Hastings. The big yacht was turned about at this point and given several trial runs up and down the builder's measured mile in the Hudson. The speed results were very gratifying, especially to the owner, Cyrus H. K. Curtis of publishing fame, who was on the bridge. He was more than pleased with the performance of his new floating palace.

Many writers in describing the Lyndonia have referred to and dwelled upon its grandeur. True, the Lyndonia is built of the finest material, and fitted with only the best equipment available for marine use—but behind all this lies a rugged hull construction after a design of seaworthiness and comfort. This yacht is capable of sailing the seven seas without the least hesitation, and her cruising radius is sufficient to cross the Atlantic with ease. There's no mistaking the capabilities of the Consolidated Shipbuilding Corporation, the shipbuilding wizards of Morris Heights. The new Lyndonia stands forth as a masterpiece in yacht design, and in it is embodied every feature that will in any way lend to comfort and stability. No effort has been spared on their part to produce an attractive craft, built upon safe and seaworthy lines, and equipped with every modern convenience.

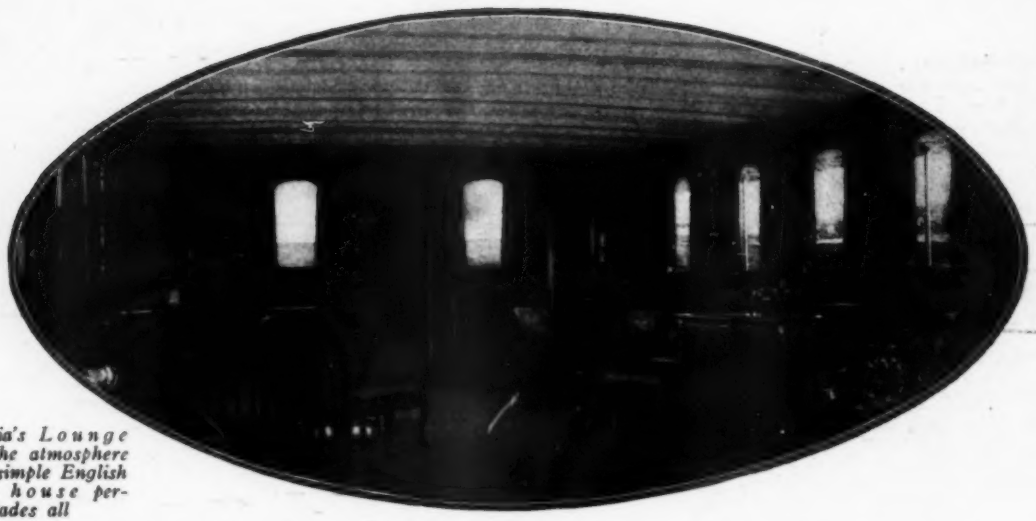
The Smoking Room is Gothic in style, done in American Oak with large leather chairs

Since the laying of her keel in the fall of 1918, construction has been progressed to completion with all possible dispatch, and now the Lyndonia is a reality, truly a masterpiece in workmanship and design and marks the beginning of a new line of yachts to be built in this country. The thrill of achievement must again be in the hearts of the builders upon the production of this magnificent vessel.

The Lyndonia has an over all length of 230 feet with a water line length of 200 feet. Her breadth moulded is 30 feet with a draft of 12 feet 8 inches. The cruising radius is approximately 6,000 miles. The hull is entirely of steel with decks, bulwarks, rails and exterior joiner work of teak. There are three decks, boat deck, main deck, and lower deck. The yacht is handled from the former, and the owner's and crew's launches and two life boats are located in removable chocks. The pilot house is arranged at the forward end of the boat



A bow on view of Lyndonia showing the perfect symmetry of the hull



Lyndonia's Lounge Room, the atmosphere of the simple English country house pervades all

deck, built of teak, finished dull. The steering wheel, engine room, telegraphs, instrument board and inter-communication systems, etc., are arranged in the forward end. Aft, the Captain's quarters are located, consisting of stateroom and private bath. Steps down on the starboard side lead to smoking room. The bridge is above the pilot house where steering wheel and duplicate controls are located. The yacht is operated from this position in fair weather. Wings on either side extend over the main deck which permits a clear unobstructed vision from the bow to stern of ship.

There are two pole masts of pine supported by standing rigging of steel between which a wireless antennae is suspended. Wire leads from the antennae run to wireless room on the port side of main deck where a complete wireless telegraph and telephone equipment is installed.

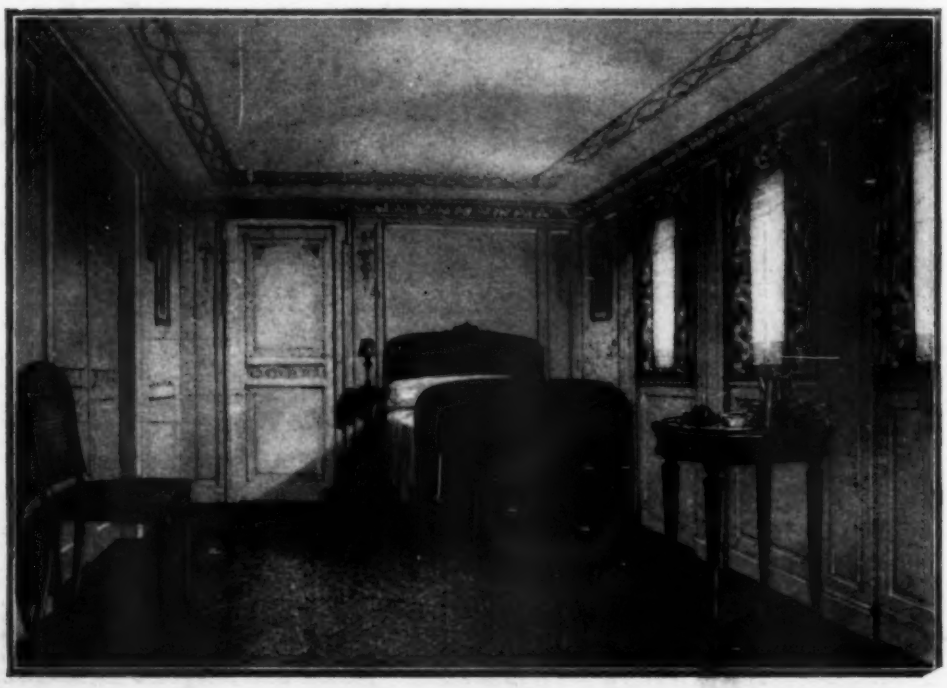
An unbroken deckhouse of teak extends the full length of the main deck. The dining saloon is arranged forward, finished to represent a style in the Jacobean period. The simple massive construction of the furniture lends a true artistic appearance of the period and reflects the skill of a prominent New York decorator who is responsible for the interior decorating in this handsome yacht. The electric light fixtures and hangings of this room are all in keeping with the period from which the room has been copied.

The service or butler's pantry is aft on the port side in which is installed all modern equipment including an electrically operated service ice box. The galley is below. A large light roomy compartment with a large oil-burning range fitted with electric blower at forward end. A pastry room is located on the starboard side. The cold storage plant is arranged under with steps leading down. There is a cargo hatch on main deck which leads to this compartment. Stores may be taken aboard through this hatch without any waste handling. The finish of the woodwork in general is white enamel with teak trim. A dumb waiter carries food from the galley to the service pantry above. Officers' quarters and mess room are forward of the galley, finished in white enamel with teak trim.

In the forepeak the crew's quarters are located with skylight over on deck. Their bunks consist of pipe berths with springs and mattresses. The centre of these quarters is utilized as mess room, and service door in watertight bulkhead aft permits easy access from galley.

The owner's and guests' quarters are located in after end of main deckhouse. The saloon, finished in satin wood

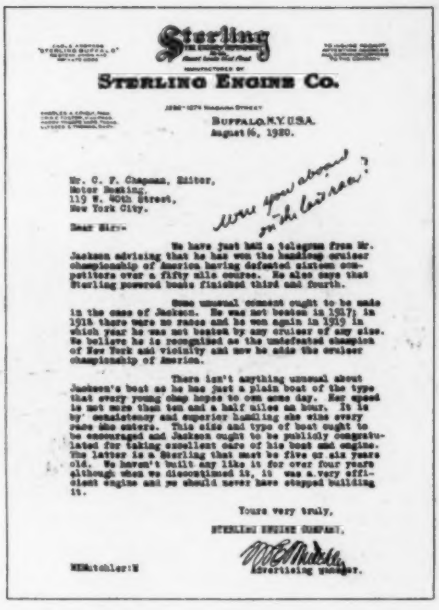
(*Continued on page 78*)



The Owner's room is simple, tasteful and comfortable. Decorated in pink and gray in French style

H. A. Jackson and Victory II, the first to hold the title A.P.B.A. Handicap Cruiser Champion of America

The manufacturer of Victory's motor pays tribute to Commodore Jackson and his boat



Sterling

STERLING ENGINE CO.

BUFFALO, N.Y. U.S.A.
August 16, 1920.

Mr. C. F. Chapman, Editor,
Motor Boating,
119 W. 40th Street,
New York City.

Dear Sir:-

We have just had a telegram from Mr. Jackson advising that he has won the handicap cruiser championship of America, having defeated sixteen competitors over a fifty mile course. He also says that Sterling powered boats finished third and fourth.

Some unusual comment ought to be made in the case of Jackson. He was not beaten in 1917; in 1918 there were no races and he won again in 1919 in which year he was not beaten by any cruiser of any size. We believe he is recognized as the undefeated champion of New York and vicinity and now he adds the cruiser championship of America.

There isn't anything unusual about Jackson's boat as he has just a plain boat of the type that every young chap hopes to own some day. Her speed is not more than ten and a half miles an hour. It is by consistency and superior handling she wins every race she enters. This size and type of boat ought to be encouraged and Jackson ought to be publicly congratulated for taking excellent care of his boat and engine. The latter is a Sterling that must be five or six years old. We haven't built any like it for over four years although when we discontinued it, it was a very efficient engine and we should never have stopped building it.

Yours very truly,

STERLING ENGINE COMPANY,

Advertising Manager.

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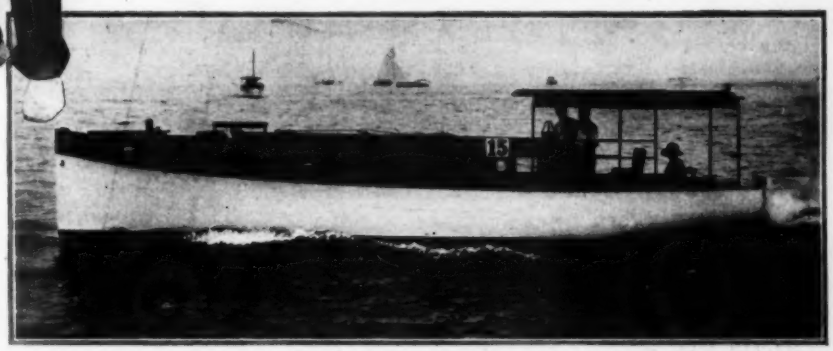
Victory II Wins Handicap Cruiser Championship

Eighteen Competitors Try for the Perpetual Challenge Trophy of The American Power Boat Association on Long Island Sound

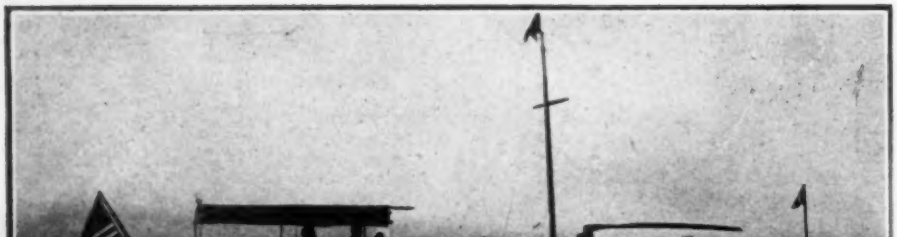


By F. W. Horenburger
Photographs by Rosenfeld

AGAIN has it been demonstrated that there is more to the winning of a long-distance race than mere horsepower. In the race for the Cruiser Championship of America, held by the New York Athletic Club under the sanction of the American Power Boat Association, on August 14th, skill and forethought were pitted against horsepower, with the result that skill proved superior and won the race for Victory II. The competition in this race was unusually keen. Over twenty cruisers had entered prior to the race, but this number had narrowed down to eighteen before the start, owing to the fact that several of the boats could not qualify to the condition that they must be not less than 30 feet nor more than 45 feet on the water line.

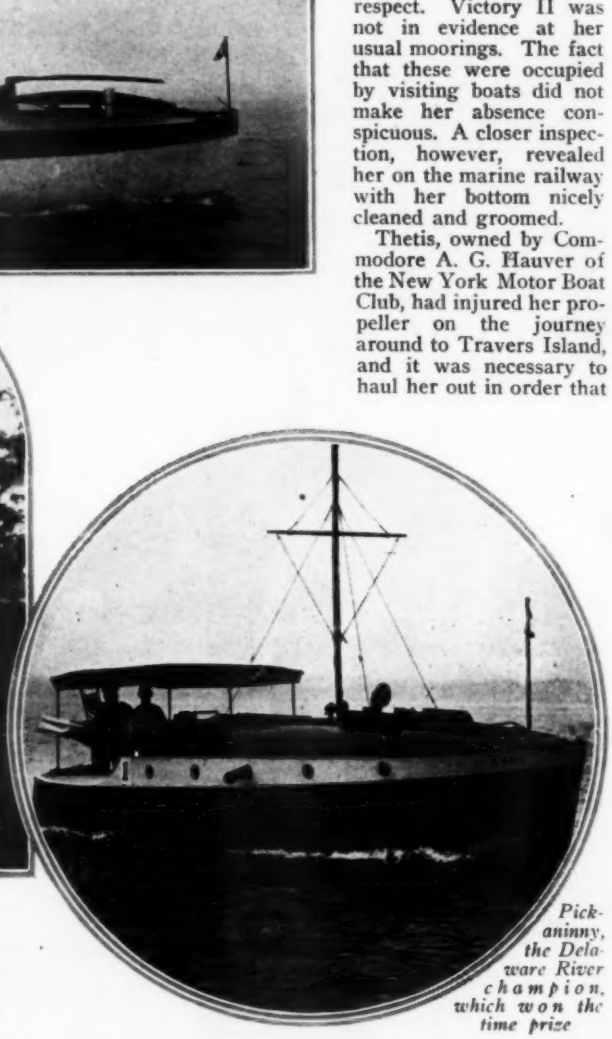
A large contingent of prominent cruisers from Philadelphia and vicinity had made the long journey from the city of brotherly love to New York waters in the effort to take the handsome perpetual challenge trophy back home with

At the start of the race, Marilene and Pickaninny in the foreground, Uonda and Victory II in the lead on the right



Sentinel, winner of second place on corrected time. She is a Luders boat powered with a Scripps motor

E. Benson and E. H. Tucker, Chairman of the New York Athletic Club Race Committee



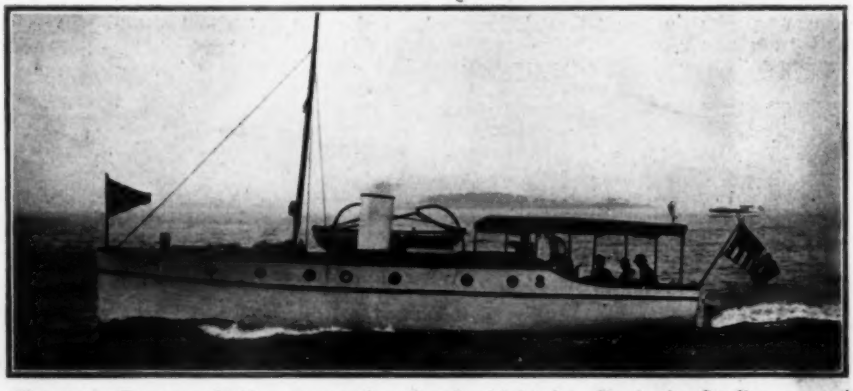
Pickaninny, the Delaware River champion, which won the time prize

them. Pickaninny, the famous Delaware River champion, was much feared among the local forces. Her new power plant, a big four-cylinder Simplex automobile motor, was reputed to drive her at phenomenal speed. Others among the visitors were Commodore A. B. Cartledge's Marguerhea, also a well-known performer, and Josephine, Arasapha and Margaret, belonging to C. Walker, A. Craemer and W. S. Yeo, respectively, all unknown quantities as far as the local sharps were concerned.

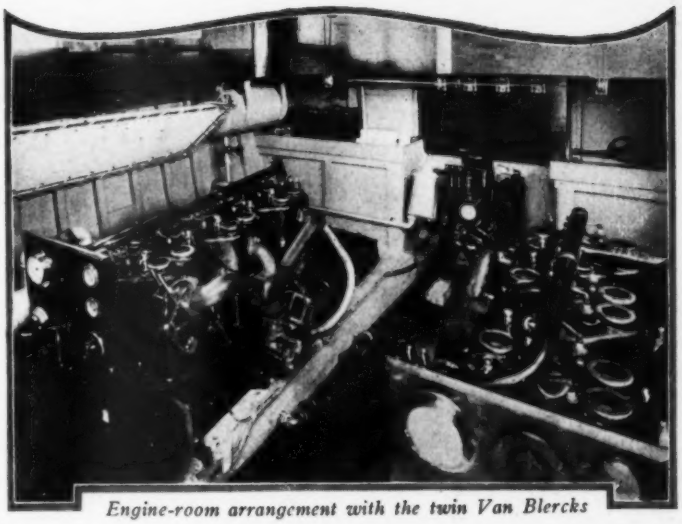
The visitors from afar and those competitors in nearby clubs had all been invited to a splendid mess dinner on the evening before the race by the yachting section of the New York Athletic Club. Commodore Williams and E. H. Tucker, Chairman of the Regatta Committee, acted as hosts, and all guests were made to feel very much at home. The principal topic of conversation was the coming race; excitement ran high as the prospects of Pickaninny being able to overcome her handicap were discussed. Sentinel, owned by A. E. Luders, the boat with the largest time allowance, was also one to be feared. She was known to be fast and well able to take care of herself. Turtle also stood high in the esteem of the informed, and Tom Farmer kept his own counsel as to how fast he was able to go. Uonda, owned by Andy Duryee, also was looked upon with respect. Victory II was not in evidence at her usual moorings. The fact that these were occupied by visiting boats did not make her absence conspicuous. A closer inspection, however, revealed her on the marine railway with her bottom nicely cleaned and groomed.

Thetis, owned by Commodore A. G. Hauver of the New York Motor Boat Club, had injured her propeller on the journey around to Travers Island, and it was necessary to haul her out in order that the bent blade could be inspected and the damage repaired. Saturday morning dawned, not bright and rosy as it

(*Continued on page* 126)



Champ, the Tamaqua Club's representative wins the third prize. She is also Sterling powered



Engine-room arrangement with the twin Van Blercks

Edamena III

Fast Deep Water Cruiser Powered With a Pair of Six-Cylinder Van Blercks

THE third and latest fast boat owned by Earl P. Charlton, Vice President of the Woolworth Company, is Edamena III. All of Mr. Charlton's boats over the past several years have been powered with Van Blerck engines and all were built from designs of Wm. H. Hand, Jr. Edamena III is a 55 by 11-foot express cruiser designed by Hand and equipped with a pair of Model M. C. Van Blerck engines, which give the boat a speed of slightly more than 24 m.p.h. She was built in the yards of Hodgdon Bros., East Boothbay, Maine.

This is a deep water cruiser, big enough, sturdy enough and seaworthy enough for offshore work. The arrangement plan provides a forward cabin with berths for four, with toilet and ample closet room. A large galley is also provided in the forward part of the boat of ample size and completely equipped. There is a semi-enclosed bridge deck amidships in which is located the control station of the boat, both for steering and operation of the engines.

The engines themselves are installed in a splendidly lighted, well ventilated engine compartment, where they have every chance to give a good account of themselves. In this same engine room is located the Delco electric generating set, storage batteries, and two pipe-berths for the crew. Immediately aft of the engine room is located the owner's stateroom, with two large berths, toilet, etc.

The after cockpit is rather exceptional in its design, as may be seen by the illustrations, the principal idea being to make this part of the boat practically wind- and weather-proof when desired.

The power plant installed in this boat, consisting of a pair of six-cylinder Van Blerck engines, give an exceptional range of speed. Mr. Charlton is an enthusiastic fisherman, and he insisted that this new boat operate as efficiently and dependably at low and intermediate speeds as it does at high speeds, and with the new system of carburetion and manifold construction characteristic of the Model M Van Blercks this boat is capable of operating at all speeds between 3 m.p.h. and 24 m.p.h.

Edamena rushes along with a smoothness never before attained

Comfortable owner's stateroom is located aft and fitted out in the most luxurious manner possible

The enclosed bridge-deck is amidships, where all the controls are brought for ease in operation

Motor Boat Fleet Greatest Attention Yacht

In the recent series of races for the Ameri lute, the American defender, defeated Sham three wins to two, the fleet of motor boat spectators to view the races proved far more boats themselves. The numerous steam were no more, their place being taken almost motor yacht—somewhat smaller in size, but ate and much better suited to every need of Yachtsman who glories in America Cup tor yacht with a pedigree was present and craft as they sailed around their thirty-mile it was not an uncommon sight to see the many of the spectators' steam yachts, but this the express cruiser of today found no diffi- with throttles only

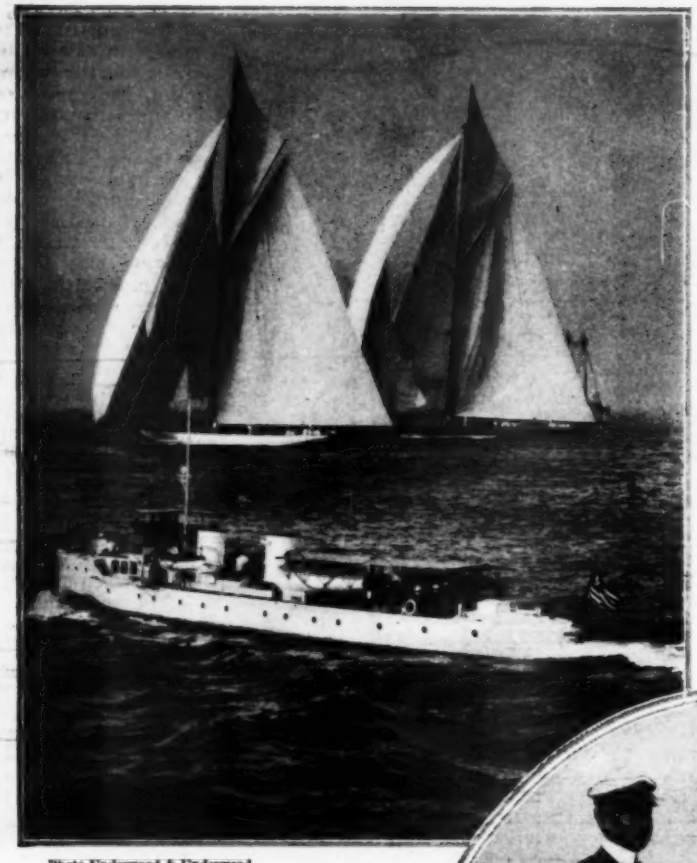


Photo Underwood & Underwood

Resolute leads Shamrock over the line. In the foreground will be seen a motor yacht typical of the hundreds of those in attendance at the races

The Race Committee which was in absolute charge of all particulars connected with the races—Frederic O. Spedden, H. De B. Parsons (chairman), and J. M. Mcdonough—on board of the Committee Boat

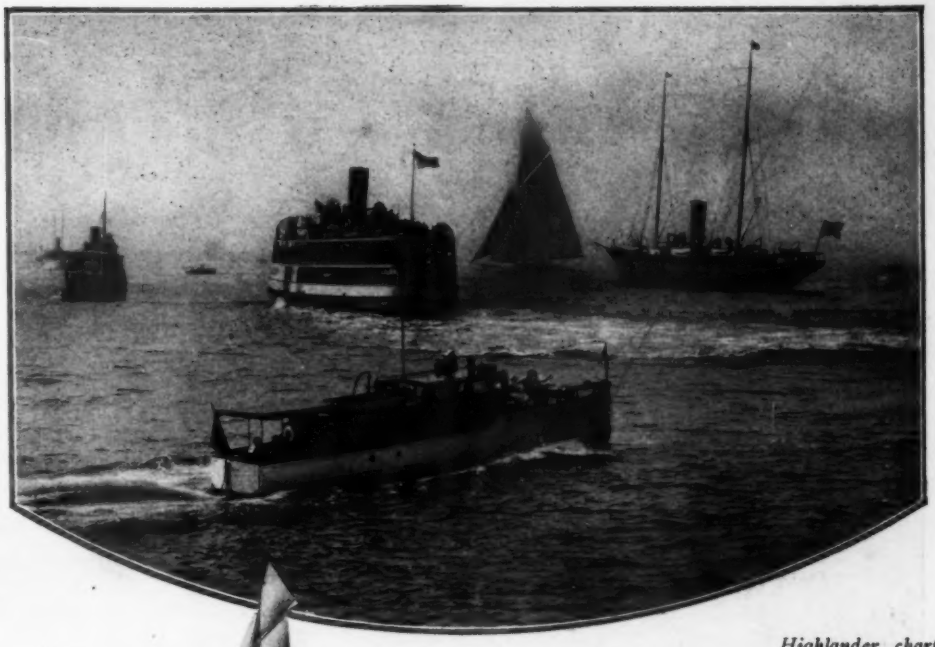
A view of just a corner of the excursion fleet which will give the reader an excellent idea of the popularity of the modern motor yacht at the Cup Races

Photo Western Newspaper Union

Commands at Recent Races

ca's Cup, in which Resorock IV, the challenger, by and motor yachts carrying interesting than the cup yachts of the past races entirely by the modern more economical to operthe type of American Races. Nearly every mofollowed the huge racing course. In the days of old racing yachts outfooting year all was different, for culty in keeping up, even partially open

Photo M. Rosenfeld



Highlander, chartered by the New York Yacht Club for its club members, and Corsair, Commodore Morgan's flagship following the Shamrock IV

Photo M. Rosenfeld

Watching a start from the forward deck of Sir Thomas Lipton's yacht Victoria

Photo E. Levick

A fast express cruiser with Shamrock IV in the background

Sherman Hoyt, American Yachtsman and America's representative aboard Shamrock IV during the races

Photo by British & Colonial Press, Toronto

Launching Miss Toronto II, present holder of the one-mile record in America. At the Mississippi Valley regatta this year this boat did a mile at the rate of 68.7 miles per hour

World's Records Likely to Be Broken at Detroit

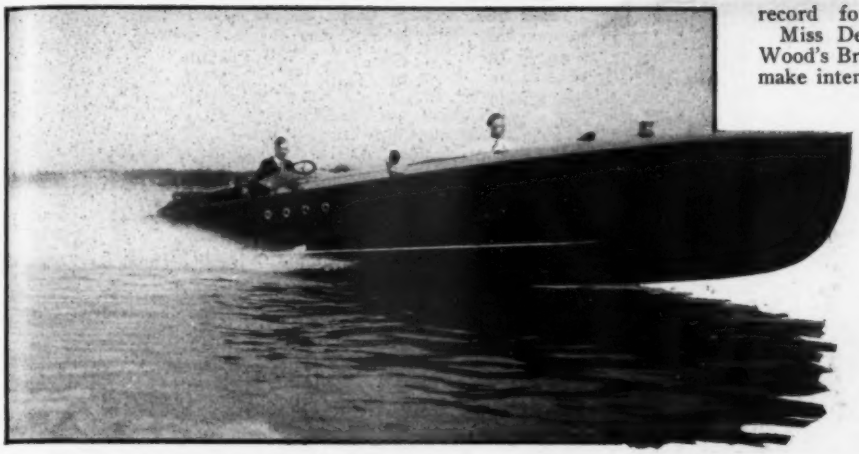
Arrangements All Complete for the Greatest Series of Motor Boat Races Ever Held in America—American Power Boat Association Regatta for the Gold Cup, Fisher Trophy, and Other Important Championships Scheduled for September 11th to 14th

THE Gold Cup Committee of Detroit, working in conjunction with the Detroit Yacht Club and the Miss Detroit Power Boat Association and the several other Detroit boating organizations, have completed arrangements for a series of races on the Detroit river, between Belle Isle and the city of Detroit, September 11 to 14, which at this writing, appears will eclipse anything of its kind ever held in this country. Commodore A. A. Schantz is again at the helm as chairman of the Gold Cup Committee, J. Lee Barrett, who has been in charge of the arrangement details of all Gold Cup races at Detroit since the famous trophy was won by Miss Detroit I at Manhasset Bay in 1915, is again

1920 A. P. B. A REGATTA AT DETROIT

Event	Name of Trophy	Saturday Sept. 11 Start	Sunday Sept. 12 Start	Monday Sept. 13 Start	Tuesday Sept. 14 Start	Wednesday Sept. 15 Start	Course	Length of Laps	Number of Laps	Distance Statute Miles	Kind of Race
A	Sallan	11:45	11:45	11:45			Lightship and return...	22.5	1	22.5	Handicap time allowance
B	Gar Wood $5,000....		1:00	1:00			Across lake and return	42.0	1	42.0	Flying start; no handicap
C	Fisher	3:00		3:00	3:00		River	2.5	20	50.0	Standing start; no handicap
D	Gold Cup	5:15		5:15	5:15		River	5.0	6	30.0	Flying start; no handicap
E	Det. Evening News.		3:00				River	2.5	4	10.0	Handicap time allowance
F	Scripps Motor Co...				11:45		Lightship and return...	22.5	1	22.5	Flying start; no handicap
G	Miller 'Chance Race.		4:30				River	2.5	4	10.0	Flying start; chance handicap
H	Mile Speed Trials..					10:00	River	1.0	6	6.0	Six one-mile dashes

A. For cabin cruisers as defined in 1920 A. P. B. A. rules; limited to a maximum speed of 17 miles per hour.
B. No restrictions as to type, size, power or speed of boats.
C. For displacement boats of runabout type over 32 feet long on water line; powered with regular stock marine motor, having a maximum piston displacement of 3,000 cubic inches, capable of making not less than 35 statute miles per hour over a measured course. (See conditions in Deed of Gift.)
D. For boats under 40 feet in length. (See A. P. B. A. Deed of Gift.)
E. No restrictions as to type, size, power or speed. Every entrant is to sail over the course some time previous to September 10th, figure his own handicap time allowance, hand it in to the Committee and start accordingly. Will be disqualified for exceeding speed calculated by 3 per cent.
F. For cabin cruisers as defined by 1920 A. P. B. A. rules, open to boats of any length under 46 feet on the water line, equipped with a motor having a maximum piston displacement not exceeding 350 cubic inches.
G. No restrictions.
H. For boats under 40 feet in length. (See A. P. B. A. Deed of Gift.)



Comanche, owned by Edsel Ford, entered for the Fisher Trophy. She was designed and built by Hacker and is powered with a Hall-Scott Marine Motor

acting as Secretary, and Frederic R. Still, who last year relinquished the Chairmanship of the Race Committee to Commodore Otto Barthell because he was out of the country, is again in actual charge of the racing events. For five days beginning at 11:45 in the morning and not ending much before sundown the Detroit river will be literally alive with racing craft of all types from all parts of the country, with a good representation from Canada as well.

The two principal events will be the Gold Cup race for hydroplanes and the first race for the $5,000 trophy offered two years ago by Carl G. Fisher of Indianapolis for the American Power-Boat Association Displacement Boat Championship of America. Both of these events will consist of three heats on successive days—the race for the Gold Cup will be three heats of thirty miles each and three heats of fifty miles each will be run for the Fisher Trophy.

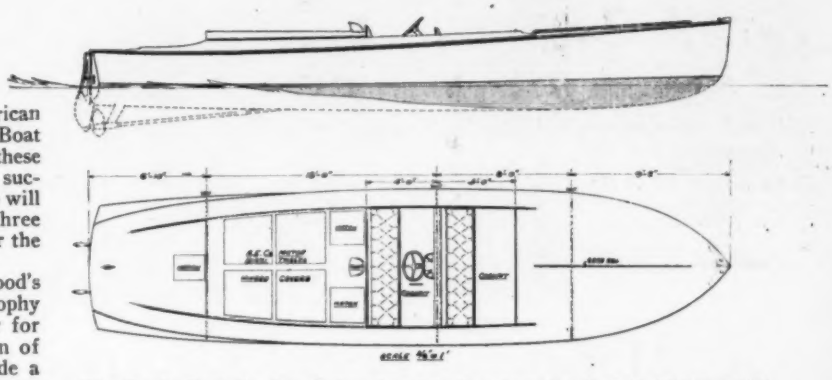
Of course Miss America, Gar Wood's winner of the British International Trophy in England, will be the chief contender for the Gold Cup and the greatest attraction of the entire regatta. Miss America made a speed as fast as 66 miles an hour in one of her laps in England, which is a world's record for hydroplanes in competition.

Miss Detroit V, the other one of Gar Wood's British racers, is entered and should make interesting competition. This boat is a 38 footer and by far the largest boat which has raced since the days of the old displacement boats. Both Miss America and Miss Detroit V are powered with two 450 h.p. Liberty motors.

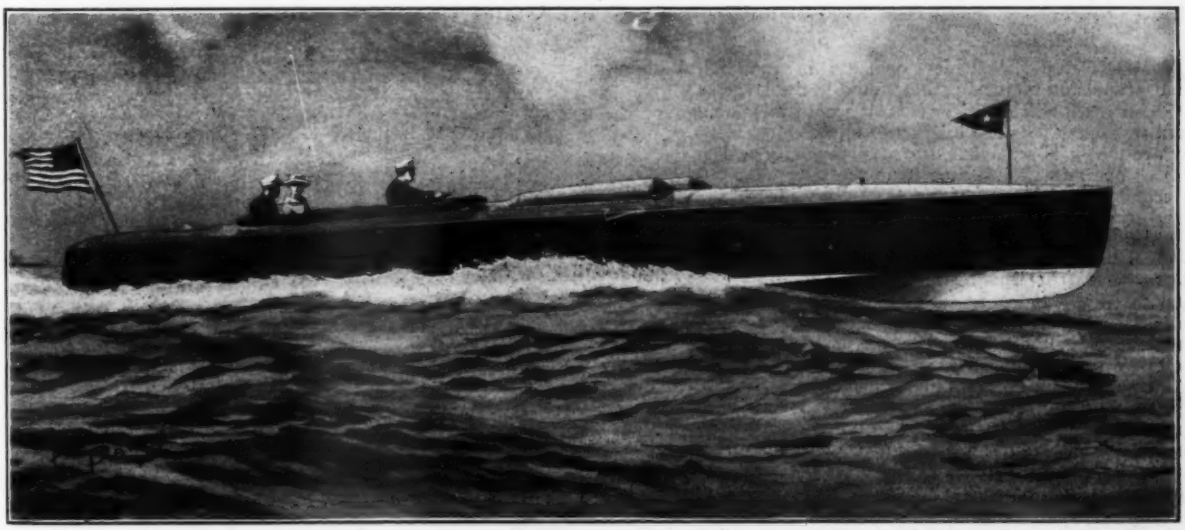
Whip-Po'-Will, Jr., Commodore Judson's British racer, powered with two 16-cylinder motors, was also entered for the Gold Cup, but unfortunately she burned and sank in 100 feet of water a few days previous to the race in England, therefore she will not compete at Detroit.

Of course, Miss Detroit II, and Miss Detroit III, also owned by Gar Wood, are entered in this year's Gold Cup Race and should give a good account of themselves because there will be actual competition, whereas in the last several Gold Cup events these two boats have been the only contenders worthy of consideration and were therefore able to jog around the course at a speed which best suited their fancy, giving the spectators an occasional thrill as they ap-

(Continued on page 54)

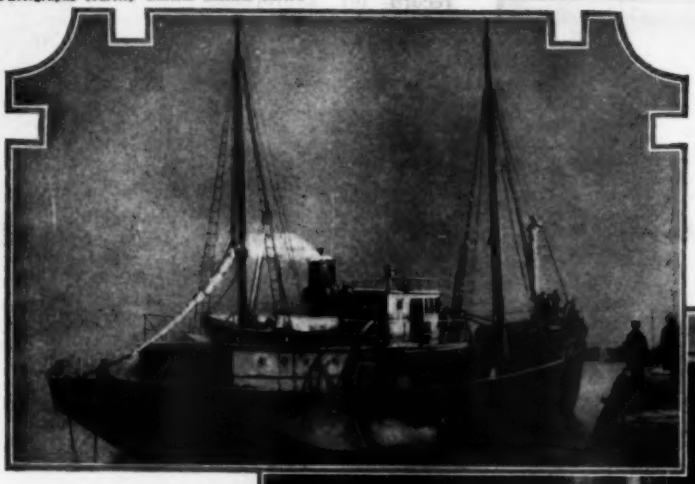


The Purdy Boat Co. has designed and built a boat for Carl G. Fisher which will be powered with an Allison motor. She looks like a young cruiser

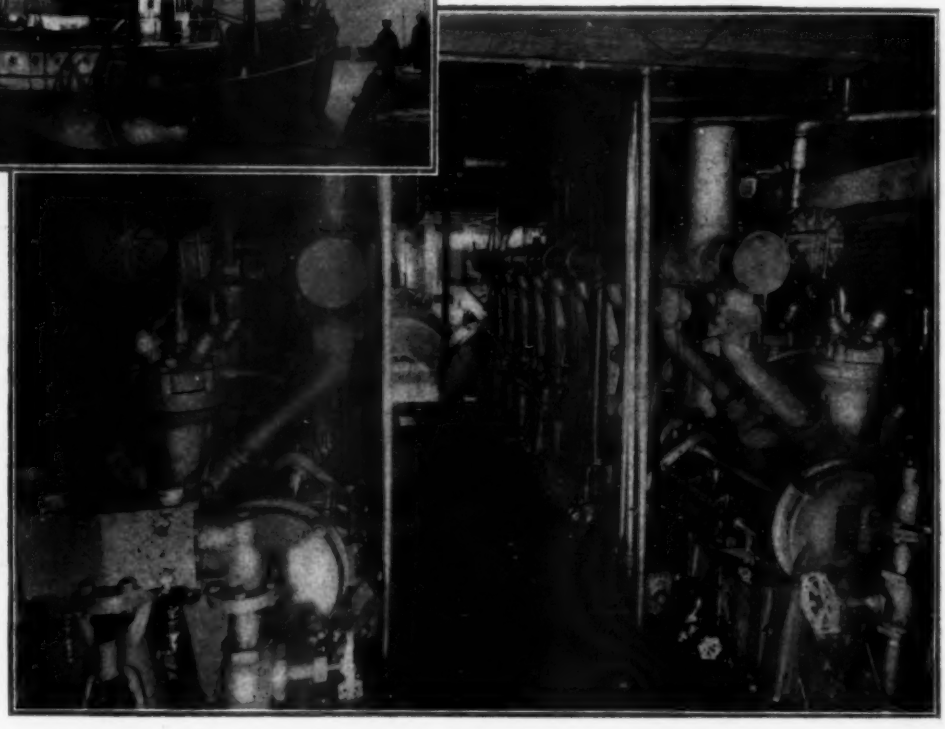


Commodore Judson's Whip-Po'-Will, Jr., designed by Fred Lord to meet the requirements of the Fisher Deed of Gift for a sensible and serviceable runabout

Photographs courtesy General Electric Review



Trawler Mariner is easily manoeuvered when making a landing



Main engine room, showing the arrangement of the pair of Nelseco Diesel motors and in the background the main electric propelling motor

motor varied at will to suit conditions. The possibilities in remote control are numerous. In this boat three distinct remote control stations are provided, one in the pilot house, one in the engine room and the third also in the engine room arranged for manual operation. From any of these stations it is possible to completely reverse the rotation of the propelling motor, without stopping the main engines, in a matter of a few seconds only.

Our illustration shows the two Nelseco Diesel motors of eight cylinders each. These develop

(*Continued on page* 80)

Mariner, a Diesel Electric Motor Ship

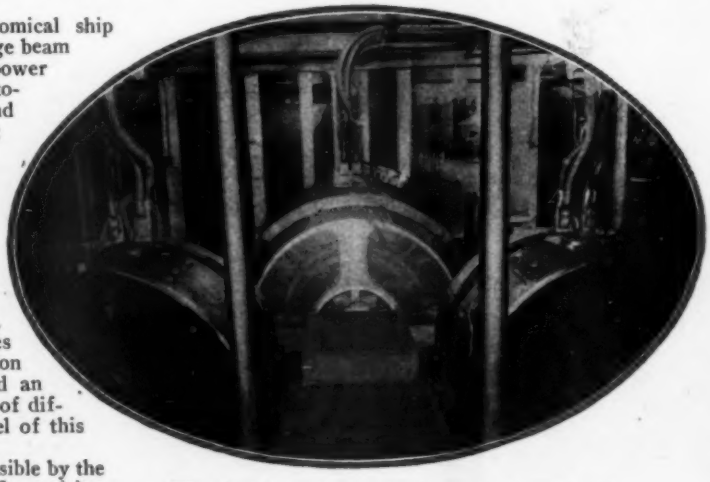
The First Installation of the Diesel Electric System of Marine Propulsion to a Large Sea-Going Commercial Craft

AMONG the latest developments in economical ship propulsion systems is that found in the large beam trawler Mariner. The installation of this power plant was completed not long since and reports today are that it is remarkable for its simplicity and ease of operation, as well as from the viewpoint of economy in fuel consumption. The first privately owned merchant vessel equipped with Diesel electric drive can therefore be said to be a complete success.

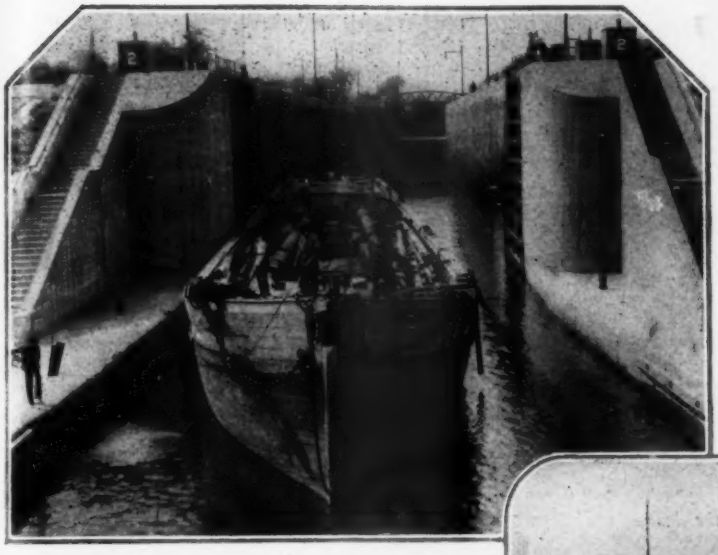
Constructed of wood, Mariner has a d. w. tonnage of 500 and is 150 feet long by 24 feet 3 inches beam and 11 feet 9 inches draft. She was designed exclusively for deep sea fishing and must necessarily be able to keep the sea at all times.

The particular novelty in this boat, however, lies in the power plant. A combination of New London Ship and Engine Company's Diesel motors and an electric propelling motor are the principal points of difference between Mariner and the ordinary vessel of this type.

High economy in fuel consumption is made possible by the flexibility of the electric system of propulsion. In cruising trim particularly, the Diesel motors can run at the maximum operating efficiency and the speed of the electric



The electric equipment is all at the forward end of the engine room. These are the two Diesel-driven generators and the single propelling motor



One of the first big boats to use the New York State Barge Canal. A Great Lakes schooner passing through on its way to relieve the shipping shortage. Many Great Lakes vessels made this trip later, some particularly big ships being cut in half and the parts coming through separately

Photos, Publishers Photo Service

Buffalo, one of the most important Barge Canal terminals, showing the co-ordination between the waterways and the railroad systems at this point

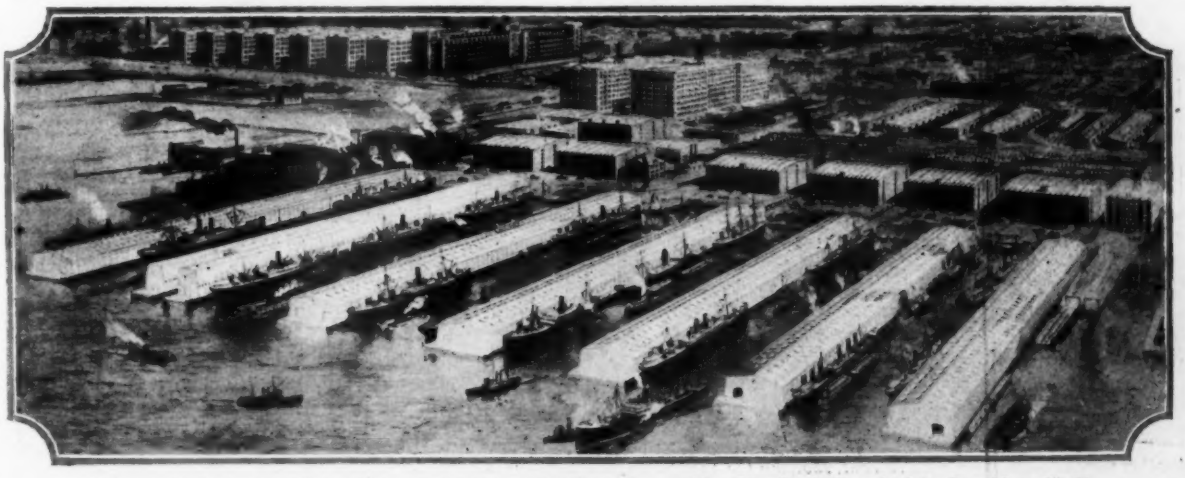
Why Neglect Our Inland Waterways

The Reconstruction Period Calls for Complete Revision of Our National Transportation System

By Representative John H. Small, of North Carolina

Member of the Committee on Rivers and Harbors.

EVERYBODY in the United States sees, more or less clearly, the immediate possibilities for an unprecedented wave of national prosperity. With some, this vision is dimmed by knowledge of certain conditions which, if not remedied in the not too distant future, will vitiate many of the favorable opportunities now knocking at our doors. At the present moment we are the prime producers of the world. We have active resources capable of un-



The most elaborate and complete waterways terminal in the world. The Bush Terminal in Brooklyn, N. Y.

Heavy shipments come through the canal just before the close of navigation for the winter

include transportation, and it is impossible to consider the general subject of transportation without including transportation by water. When the country is prosperous we expect to find industry active. The mills and the factories are busy, the farms are yielding abundant harvest and the mines and forests are contributing their quota to the volume of production. We expect to find a demand for all these products, with money and credit sufficiently abundant for the producer and the buyer. But all these conditions may exist and unless the facilities for distribution are at hand there can be no prosperity.

There are substantially three means of distribution: The highways, the railways and the waterways. We are gradually

Photo. Underwood & Underwood

Havre, France. European waterways are well developed for American trade

dreamed-of expansion. The rest of the world is, or soon will be, begging for our surplus of goods, of food, of energy.

Whether we make good this demand, to the benefit of ourselves, individually and nationally, and to the benefit of those we serve in distant lands, or allow the seeds of this great opportunity to perish in sterile soil, depends upon several problems, all within our province and within our abilities to solve. Not the least of these is the problem of transportation.

When you discuss the prosperity of a community, a city or a nation, you must

Photo, Brown & Dawson

Railroads carry most of the freight in the United States today

Another view of New York's waterfront, showing the possibilities for heavy traffic

learning that these are not rivals or separate in their uses, but that they are to be used conjointly and co-ordinated with each other. For fifty years or more, since American enterprise and capital extended railroads into every section of the country, the public has been sedulously taught that the railroads were equal to all the demands for distribution and that it was only necessary to maintain them and increase their mileage to meet the growth of the country. It became the policy of the owners and managers of railroads to regard the waterways as unfriendly competitors and to discourage their use. Navigable rivers were paralleled by rail lines, competitive rates were reduced below the point of competition,

(*Continued on page* 104)

Lady Helen, a 50-foot standardized Albany cruiser being hoisted on board steamship for a voyage through the Panama Canal. Proper facilities make easy work of a job of this kind

South America as a Market for Marine Motors

Neglected Opportunities in This Large and Still Undeveloped Country Which is Crying for Marine Motors and Boats in Unlimited Quantities

WHY are American manufacturers of marine motors losing out in Argentina? Why have American, and British, too, for that matter, engines declined in the market of the South American Republic and Italian internal combustion engines increased in importations from 11 in 1908 to 364 in 1914? Will the Italian engines again replace American-built motors as soon as Italy is in a position to enter this market again? Cannot the United States compete in its own "back yard" with its neighbors from across the street?

These are all important questions and the answer may only be found in a careful and painstaking analysis of conditions in the Argentine Republic. It is true the United States furnished more than one-half of the gasoline and kerosene engines used in the Argentine up to the outbreak of the war, but it is equally true that our market in that Republic was on the decline. This was a field in which Germany was not ranked as an important competitor, although well represented with agencies in various parts of the country.

Argentina is an important market for marine motors, for it is a rapidly growing one. It may be for that reason that competition is keen and dealers do not sell on a very wide margin, but it is withal a profitable field for exploitation by American motor builders, as the people are extremely intelligent and quick to see the advantage in using motive power of gasoline and kerosene over other types.

This method of packing and transporting is sometimes necessary and motors and parts should be limited to weights which can be handled this way. Much complaint has been made about the faulty packing of motors and parts, packing cases which do not stand up under the severe methods of handling should not be used

How much more efficient these barges would be if they were equipped with heavy oil marine motors

Figures for last year are not available yet, but in 1918 the United States furnished 182 gas engines, 637 gasoline engines and 161 kerosene engines. These totals, however, include both the stationary and marine type. It is impossible to state just how many of each type were imported, as the Argentine customs reports do not subdivide them.

Owing to the enormous increase in the price of gasoline the sales of gasoline motors have been affected somewhat in the Southern Republic, but what this type of engine has lost the crude-oil engine has gained in volume of sales. There is, to be sure, an oil-producing center at Rivadavia, but the total production of the wells there is only 4,000 metric tons of crude oil per week. The metric ton equalling 2204.6 pounds.

This oil is heavy, with an asphalt base, suitable for fuel but not for refining, but any change for the better in the price of fuel oils will be reflected in the market for oil-burning engines. Thus the cost of available fuel oils has a direct bearing on the sales made in the Argentine Republic, not so much in quantity, but rather as to type. With cheap fuel oils the American engines would dominate the market; with present prices for fuel oil prevailing for some time, the Swedish, German and other European crude-oil engines will limit the sale of American engines burning gasoline and kerosene. Competition must be largely between crude-oil and gas-oil burners. When fuel was selling at normal prices—that is, its cost in the United States plus freight and profit—the American engines enjoyed a considerable vogue, and the American engine was exactly adapted to the Argentine market. For instance, back in 1908, when gasoline and kerosene could be had at a reasonable figure, of the total imports of 1,138 gasoline and kerosene motors the United States furnished 573, and the next year this country shipped 581 motors to the Republic, out of a total importation of 1,106.

The high-compression engine using a medium density fuel, semi-refined fuel, and gas oil, has good selling points, especially in the larger sizes, with the present abnormal prices for refined fuel prevailing. One of the peculiarities of the Argentine situation may be gleaned from some figures furnished by Wilbert L. Bonney, the United States Consul at Rosario, Argentina. These statistics show that American motors sell at prices far below those quoted by their European competitors, and yet suffer in sales, although they enjoy an excellent reputation, especially where they are to stand hard usage. These American-built motors are better adapted for the needs of a developing country, and still in places and with certain classes they cannot compete with the far more expensive European models. They are a distinct article serving special purposes, despite the fact that their selling points are known to both the agents and the public. Let us examine the Consul's figures.

The list price of an American 2 h.p. gasoline motor is given as $157, while the list price of a 2 h.p. Belgian gaso-

Primitive methods of transportation necessary when heavy objects have to be hauled into the interior of South America. Motor-driven barges on the numerous rivers would simplify this work

line engine, with magneto, is $264. The list price of an American 4 h.p. engine with magneto is $250, while a Belgian 4 h.p. engine is listed at $414, and a British 4 h.p. engine is sold at $460. The list price of a popular American 6 h.p. engine is about $510 with magneto, while the price quoted in Rosario on a Swedish product, a model of 5-7 h.p., is $857.50. The retail price of another gasoline motor of 9 h.p. is $650 for the American model, while the price charged by the same house for their English kerosene motor of 8 h.p. is $1,050. The retail price of a 1½ h.p. engine, adapted to burn gas oil, is $175. An Italian motor which enjoys a good sale is in the hands of a large and active firm, which also handles a cheaper American motor. An American gasoline-kerosene engine of 1½ h.p., with magneto ignition, is being offered for the purpose of charging storage batteries for producing light to the extent of 20 lights of 25 candle power.

It will be seen from the above that European makers of motors do not compete with American engines on the basis of price, but depend upon their claims of greater durability, efficiency and quality. For one who knows the high quality of the American product as intimately as do the readers of MoToR BoatinG, this sounds like the veriest poppycock, and yet we cannot alter the facts. They stand irrefutable, that European motors do sell in direct competition with American makes to the extent of motor for motor, although the alien product is much higher in price. The fact that the motors from the United States are so much cheaper creates a type of sale wherein the purchaser expects to use our motors as a sort of experiment. He has it installed in his boat, particularly if it is a pleasure craft, until he becomes accustomed to the idiosyncrasies of gasoline or kerosene motors in general, and then he gets what he considers a better one at a higher price—an European product. Dealers in Rosario have even advocated not attempting to compete with the higher priced European product by America, but to continue selling our engines in the same direction. This is, of course, a question to be determined by the individual manufacturers of marine motors, but it seems an absurdly astonishing doctrine that motor builders of the United States should be content with effecting sales of this nature.

Difficulties involved in loading and unloading steamers could be solved by the use of adequate motor barges

Another trade factor that the manufacturer must determine for himself is whether he wishes to permit his Argentine agent to dispose of the motors under the trade-mark of the South American firm. There are both advantages and disadvantages in this practice, which is quite general in many places in both South and Central America. The agent, if well known and enjoying a considerable prestige in the country, can much easier introduce goods under his own trade-mark than those bearing the name plate of an unknown manufacturer, but on the other hand, when once the motor is in service and a reputation has been achieved, it may be a fairly simple matter for the agent to sell engines of other makes by using his own trade-marks on these also, when the consumer particularly desired the American product.

Two-man-power barge with a capacity load. Would a small marine motor be welcome here?

The factor of proper representation enters largely into American sales. The writer is an advocate of American branch houses and agencies conducted by Americans, but in Rosario the American motors are all sold by European houses. It is true that these firms have sold our goods without much favoritism and disclaiming any sentiment toward their own home product, but it is not human nature to refrain from pushing the goods of one's mother country, and there is no doubt in the mind of the writer but that American motors have lost sales because they were not handled by Americans. It is quite true that our own agencies would be handicapped for some time, because of their lack of knowledge of local customs and conditions, but European firms had to meet that same situation in the beginning and if they have overcome it in time, there is absolutely no doubt of our ability to do so too. At present throughout Argentina there is hardly a firm representing some American marine motor that does not also represent a competing European

(*Continued on page* 124)

A Single-Handed Cruiser

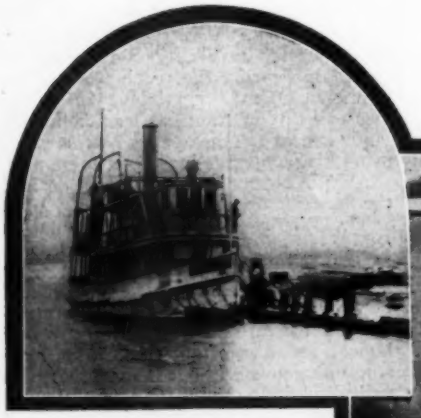
Capt. Thomas Drake, Who Plans to Cruise Around the World All By Himself

Captain Thomas Drake left Seattle in July, 1915, and sailed single-handed to the east coast, reaching Eastport harbor in October, 1918. He covered 26,000 miles alone in his auxiliary craft from Seattle to Eastport, Maine, a far-east frontier port. On his return voyage via Panama Canal he lost his craft off the southwestern coast of Mexico, was captured by Mexican bandits, and his money and effects stolen

The motor equipment for this long voyage was a single cylinder 5 h.p. Regal motor. He has secured a new boat and intends to start on another single-handed voyage completely around the world

Where There Is Some Tide

A Range of 24 to 28 Feet is Annoying at Times



The enormous tide range at Eastport is well illustrated in these photographs. The crude oil ferry Lubec has difficulty in discharging passengers on extreme tides. At low tide it is quite a climb to the wharf from the upper deck, and at high tide the lower deck is well above the wharf. The average range of tides is 24 feet with a maximum of 28 feet. The ferry Lubec is 70 feet long and was equipped with a 100 h.p. Diesel engine which drives the boat at 10 knots, with a fuel consumption of 70 gallons of crude oil per day

Tornado, a Hand 45-Foot Auxiliary Schooner

Designed by William H. Hand, Jr.

Exclusively for MoToR BoatinG

FOR those who want deep-water sailing, we commend the plans of Tornado, published herewith. She is a real boat for real sailormen. A ship in every sense of the word, embodying all the good features and qualities of larger vessels. Just the thing for general cruising with ample cabin and deck space. She is easily handled by two men and therefore will not require a large crew. Substantial enough and safe enough to take her proud owner anywhere he chooses to go. She is just under 45 feet long, 12 feet 6½ inches beam, and almost 6 feet draft.

The construction of Tornado is heavy and substantial throughout. Her frames are of white oak spaced 9 inches apart. Planking of Oregon pine is to finish not less than 1¼ inches thick. A heavy cast iron keel casting, weighing a ton and a half, is attached to the bottom of the keel. In addition, ballast composed of lead pigs and several tons of concrete made up with steel plate punchings will be added on the inside to increase the stability.

Tornado, being a heavily built boat, is entirely beyond the range of the amateur builder. It will take the facilities of a well-equipped boat-yard to turn out a boat of this kind.

The accommodations are ample and complete for a large party. Pipe berths in the forecastle take care of the crew while the main cabin has folding transom berths to accommodate four more persons. A very complete galley equipped with all conveniences is also provided. A regular stove, a large refrigerator, a sizeable sink and plenty of cupboard and locker space.

The engine is given a compartment by itself and is one of the heavy-duty fuel-oil engines of the Diesel variety. Horsepowers from 20 to 30 will be suitable to enable Tornado to make port comfortably in case of a calm. Additional pipe berths are also provided in the engine-room to take care of two additional persons. The total sleeping accommodations accordingly is sufficient therefore to provide for from ten to twelve people without undue crowding.

Fuel is carried in a large tank under the cockpit floor and enough is carried to insure freedom from worry on this score.

The cockpit from which the boat is steered and handled is roomy and big enough to accommodate the entire crew.

Complete specifications and information to complete the construction of Tornado are given on the following pages.

Plans and specifications of all boats in this series printed previously include: January—Edith, a 15-foot runabout; February—Jane, an 18-foot runabout; March—Katharine, a 30-foot cruiser; April—Dorothy, a 25-foot runabout; May—Zenith, a 25-foot cruiser; June—Cyclone, a 36-foot auxiliary; July—Eclipse, a 40-foot express cruiser; August—Margaret, a 28-foot cruiser.

In addition to the 45-foot schooner Tornado, there are still to be published plans for a 21-foot runabout, a 36-foot cruiser, and a 28-foot runabout.

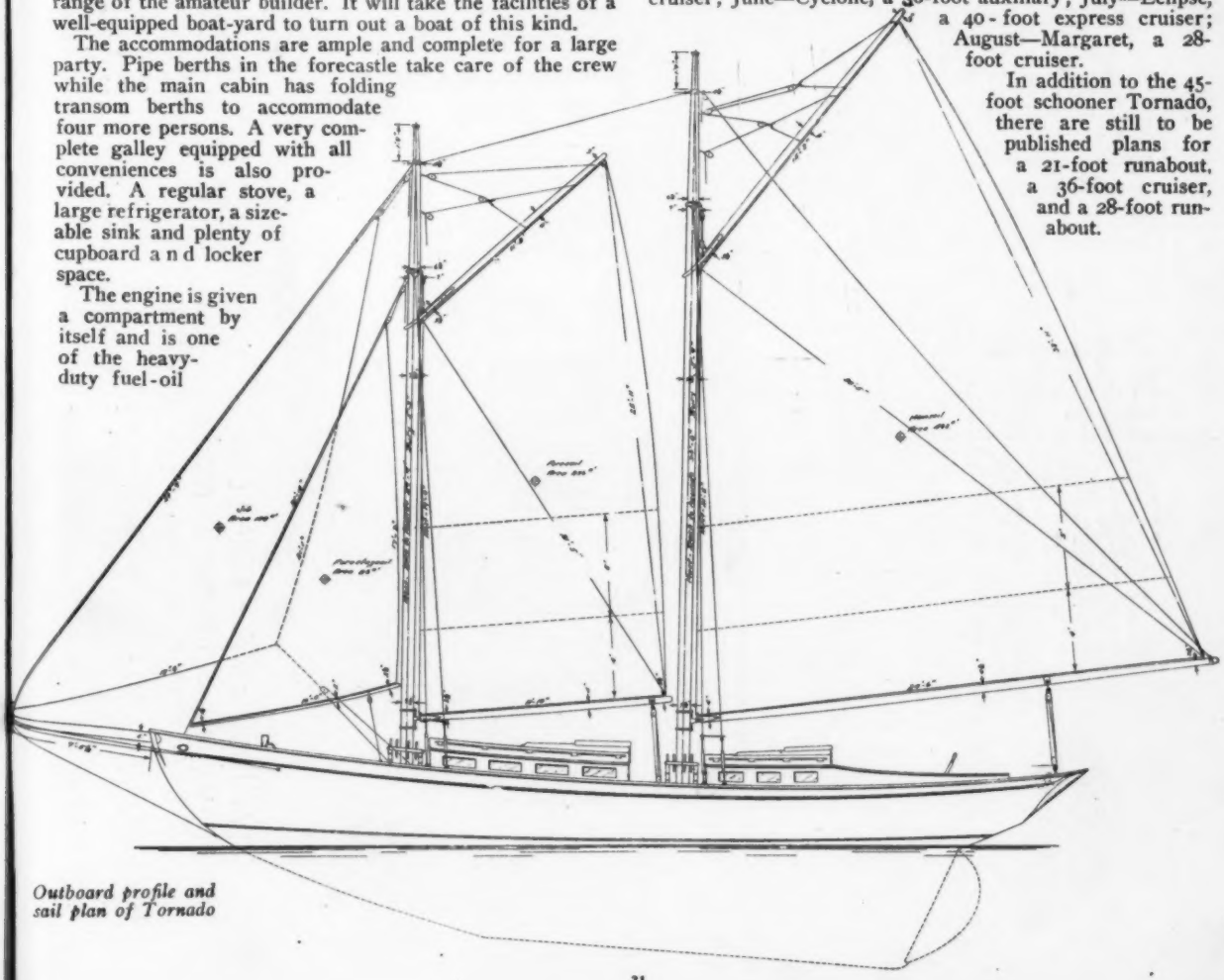
READ WHAT MR. HAND SAYS ABOUT TORNADO

The auxiliary schooner is rapidly growing in popularity, for the type is one which has probably more to recommend it to those who desire to cruise than any other type now in use.

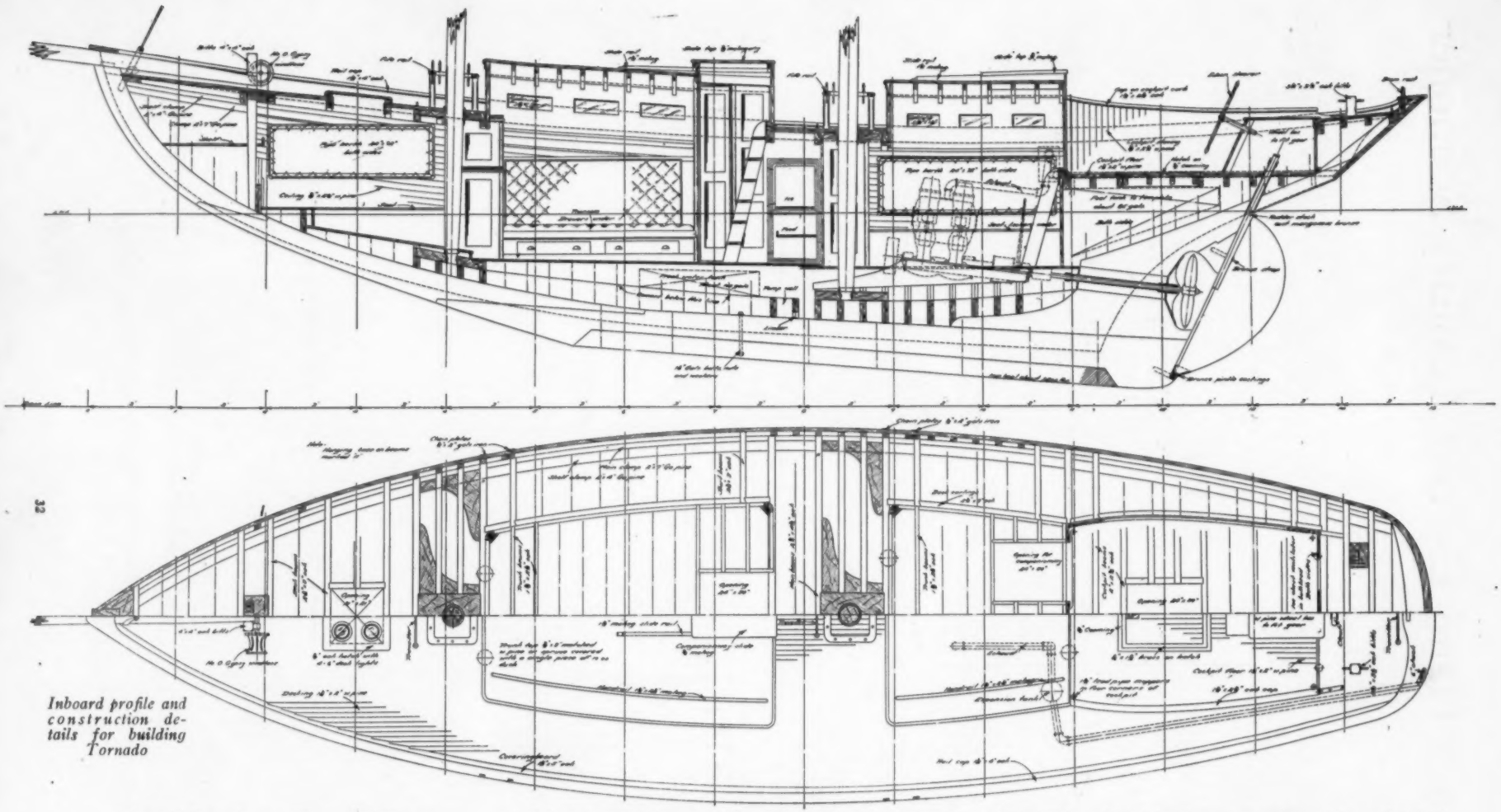
This little ship is, in size and lines, right for general cruising, as she is sufficiently large to give excellent cabin and deck space, also small enough to be easily handled by two men under almost any conditions.

She is powered with an oil engine rather than gasoline to eliminate the gasoline hazard and to provide a reliable, efficient power plant which may be operated very economically.

WM. H. HAND, JR.



Outboard profile and sail plan of Tornado



Inboard profile and construction details for building Tornado

Specifications For 45-Foot Hand Auxiliary Schooner Tornado

Designed by Wm. H. Hand, Jr., N.A.

Dimensions

Length, overall, 44 feet, 10½ inches; waterline, 35 feet, 1½ inches; beam, 12 feet, 6½ inches; draft, 5 feet, 11 inches.

General Conditions

The yacht is to be built under suitable housing. All materials and manufactured articles, and articles of construction, of whatever kind, and in every department, are to be of the best in quality for their respective purposes.

All workmanship to be of the first class and the best, and the whole executed under the direction and to the satisfaction of the owner or his duly authorized representative.

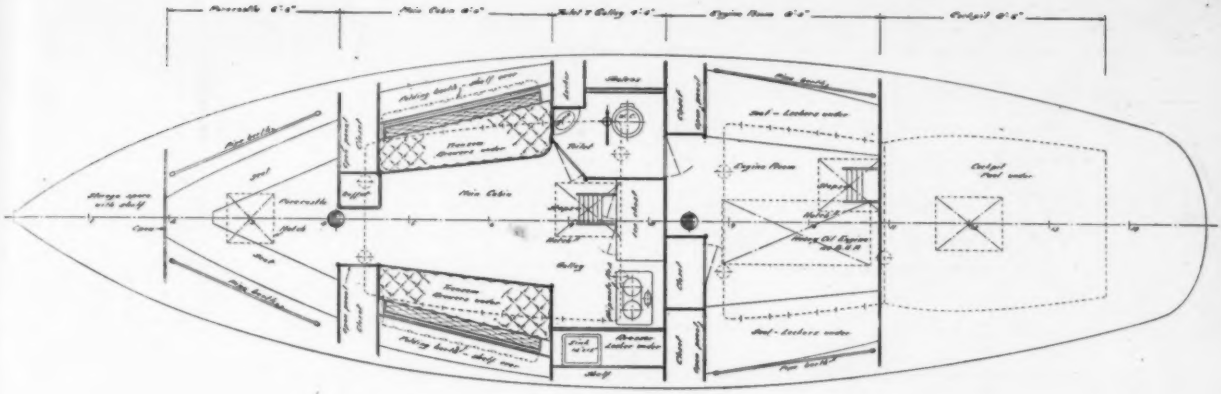
Work not shown by the drawings or specified herein, but which is usual and necessary for a yacht of this type, is to be done by the builder without extra charge.

Workmanship, materials and fittings which are not of the best will be rejected by the owner and must be replaced at the builder's expense with workmanship, materials and fittings which are approved.

Frame

Keel: The keel will be of oak, sided 11 inches, molded and formed as indicated. To be jogged for heels of frames and rabbeted for planking.

Stem: To be of white oak, natural crook, sided 6 inches and molded as shown. To be rabbeted for planking and



Interior arrangement plan of Tornado, the Hand Auxiliary Schooner

bearded to carry out all lines of same. To be properly scarphed as indicated and securely bolted.

Shaft Log: To be of white oak, molded 9½ inches and sided to conform with lines. To have shaft hole 2½ inches in diameter and to be securely bolted in place, with yellow metal bolts alongside shaft hole.

Deadwood: To be of white oak to conform with plans, very securely bolted.

Horn Timber: To be of white oak, sided 9 inches and molded and tapered as required by plan, and securely bolted through shaft log.

Stern: To be of well-seasoned white oak in six or seven cross strakes, bent to form on radius of 15 feet. To be supported by indicated 6-inch hackmatack knee in center with 3-inch white oak back rabbet pieces to take fastenings and to have intermediate oak cleats about 2x3 inches, spaced in center of each half of stern. There will be oak quarter knees as required by plans. Plank ends to form miter with transom in approved manner.

Frames: To be of white oak, 2x2⅜ inches, steamed and bent to form, spaced 9 inches on centers. Heels set in mortises in keel and securely fastened.

Floor Timbers: On all frame heels, there will be floor timbers of 2⅜-inch white oak, sawn to form. To be securely bolted to keel and through frame heels on top of which they are to be placed.

Mast Steps: To be of white oak, molded 3½ inches and sided 12 inches. To be jogged into floors and securely bolted in place by bolts into floor timbers.

Beam Clamps: To be of Georgia or Oregon pine, 2x7 inches, set as shown, extending full length of hull and securely bolted through each frame head with 7/16-inch galvanized bolts and nuts, one in each frame crossed.

Shelf Clamps: There will be shelf clamps of Georgia or Oregon pine, 2x4 inches, worked under deck beams from stem to stern, securely bolted in place as specified for stringers and clamps.

Bilge Stringers: On each side of hull there will be two bilge stringers where indicated, same to be of Georgia or Oregon pine, molded 2 inches and sided 5½ inches, bolted through each frame with one 7/16-inch bolt. Bolts spaced on alternate sides of stringers with nuts inside. Stringers to extend from stem to stern.

Motor Beds: To be of white oak, sided 3 inches and molded as required by plan, to properly fit motor which will be supplied by the owner. Beds will be accurately fitted to bear properly on top of floor timbers, to which they are to be securely bolted.

Deck Beams: All deck beams are to be of white oak, sawn to form with crown of 5 inches in 12 feet. Main deck beams located where shown, will be sided 2¾ inches and molded 4½ inches. Auxiliary deck beams sided 2¼ inches and molded 3 inches. Short beams sided 2¼ inches and molded 3 inches, with inboard ends halved into oak carlings, 2½x3 inches, to extend from end to end of cabin trunks and to aft end of cockpit. Outboard ends to be halved into deck beam clamps and securely fastened.

Knees: There will be 2½-inch oak or hackmatack lodging knees worked in deck frame abreast of foremast and mainmast where indicated. There will also be 2½-inch oak or hackmatack hanging knees on deck beams marked K.

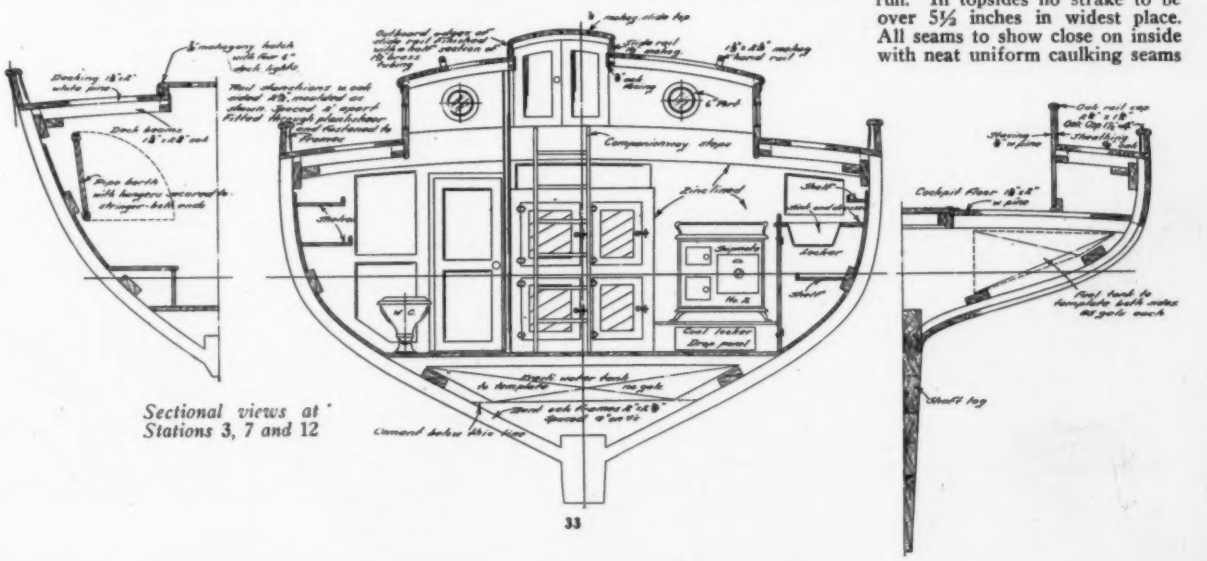
Partners and Breasthook: There will be 2½-inch oak partner planks set as shown to take fore and mainmast. These will be jogged into main deck beams and very securely bolted to beams and to knees. There will be a 2½-inch breasthook aft of stem where shown, securely bolted. There will be suitable oak reinforcing pieces under decking between beams at bitts, travellers and all heavy fastenings.

Bitts: There will be a pair of white oak bitts 4x4 inches forward where shown, set to fit windlass and with heels securely bolted to floor timber. There will be a pair of quarter bitts of white oak 3½x3½ inches aft, where shown, securely fastened in place and fitted with ¾x10-inch brass cavels.

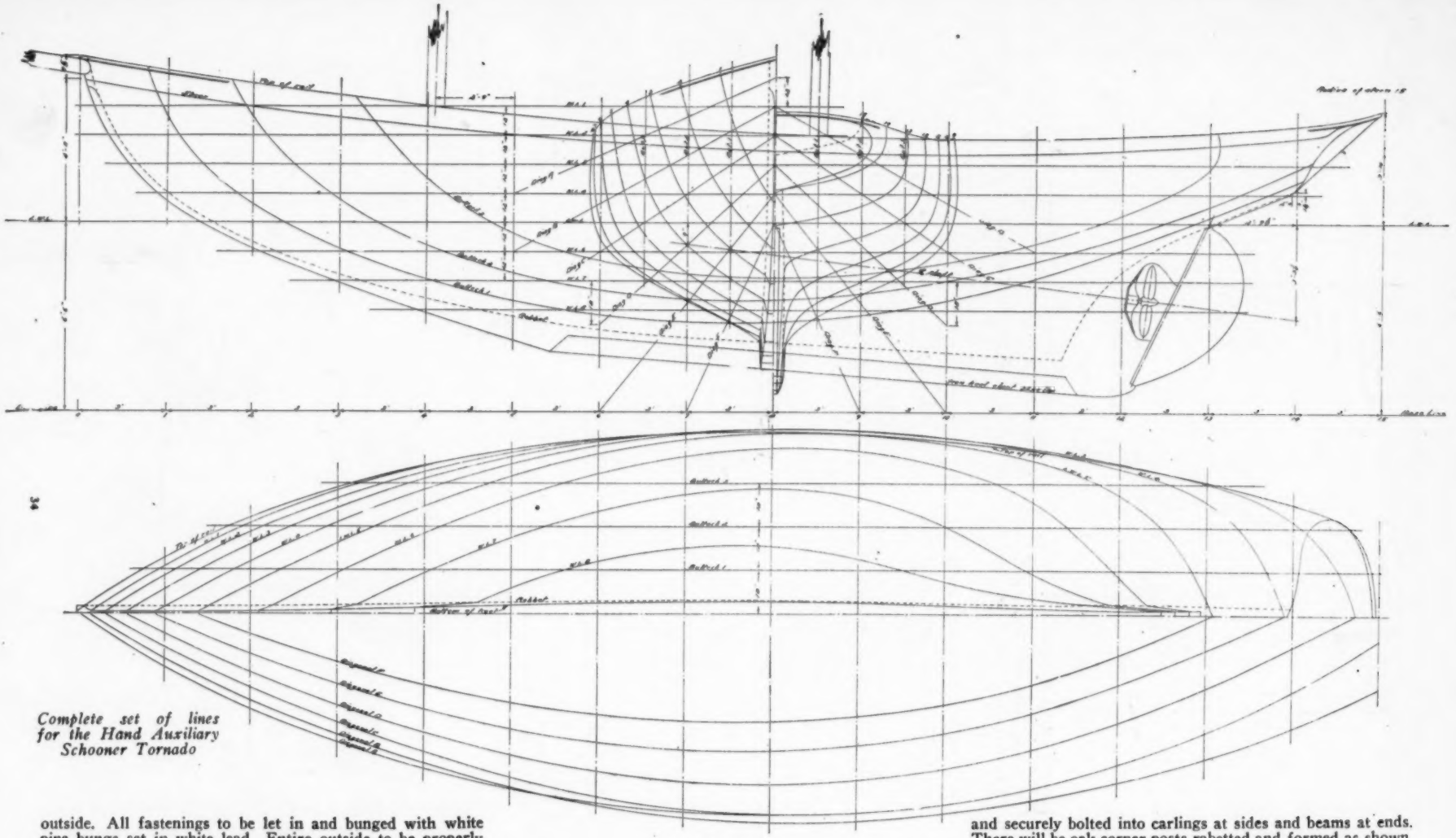
Cockpit Beams: To be of white oak, sided 2 inches and molded 3¾ inches. Beams to have crown of 3 inches in 10 feet, with ends securely bolted to frames.

Planking and Decking

Planking: To be of Oregon pine to finish not less than 1¼ inches thick, in as long and as narrow lengths as is practical to run. In topsides no strake to be over 5½ inches in widest place. All seams to show close on inside with neat uniform caulking seams



Sectional views at Stations 3, 7 and 12



Complete set of lines for the Hand Auxiliary Schooner Tornado

outside. All fastenings to be let in and bunged with white pine bungs set in white lead. Entire outside to be properly planed off and sandpapered to a satisfactory surface.

Decking: Main decks to be of white pine, 1¼x2 inches, laid straight fore and aft with suitable caulking seams to be filled with Cole's seam cement, colored to match deck paint. All fastenings to be let in and bunged with white pine bungs set in white lead. Covering boards to be of white oak 1¼x5 inches, finished like deck, to be painted as hereinafter specified. Pit flooring to match main decks. Note: Decking and pit flooring will be finished in paint, but must be free from knots which will show through paint.

Deck Joinerwork

Main Rails: To be of 1¼-inch Oregon pine, set in about ⅜ inch from outboard edge of covering board and supported by indicated oak or locust stanchions. The heights of this rail to be taken from line plan. There will be a white oak cap 1½x4 inches, neatly formed and rabetted on, fitted forward and aft as shown.

Cabin Trunks: Sides and ends of cabin trunks will be of white pine 1½ inches thick, rabbeted ¾ inch over deck edge and securely bolted into carlings at sides and beams at ends. There will be oak corner posts rabetted and formed as shown. Trunk beams will be of white oak 1⅛x2¼ inches, spaced as shown, sawn to form with 6-inch crown radii and ends in jogs in trunk. Trunk decks will be of ⅞x3-inch matched chamfered lower edge white pine or spruce covered with 10-ounce canvas, laid in thick paint, tacked around edges where same will be covered by trunk top ribbands indicated, and arranged with 1-inch wide flaps turned up on inner side of all openings. Each canvas will be in single piece. The top of aft trunk to be arranged so that it may be removable.

(*Continued on page 56*)

SMALL MOTOR BOATS

Their Care, Construction, and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for the November Prize Contest

1. What criticisms would you make of the service rendered by motor boat manufacturers and dealers, outlining any details in which there may be marked room for improvement?

Suggested by D. McC., Detroit, Michigan

2. Explain and illustrate how you would temporarily patch a stove in plank so that the boat could proceed and how would you keep her afloat?

Suggested by W. B. M., Newburgh, N. Y.

3. Explain any method or device that you have used with satisfactory results in locating a knock in a motor.

Suggested by W. B. M., Newburgh, N. Y.

Rules for the Prize Contest

ANSWERS to the above questions for the November issue, addressed to the Editor of MoToR BoatinG, 119 West 40th St., New York, must be (a) in our hands on or before **September 25,** (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before **September 25.** The Editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions below, any article or articles sold by an advertiser advertising in the current issue of MoToR BoatinG of which the advertised price does not exceed $25, or a credit of $25 on any article which sells for more than that amount. There are three prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer all.

For answers which we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR BoatinG, of which the advertised price does not exceed $5, or a credit of $5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

Suggestions for Improving the Motor Boat Show in December

Hints to Exhibitors and Show Management Which Will Tend to Increase the Popularity of Their Show With Motor Boatmen

Answers to the Following Question Published in the July Issue

"With the next motor boat show scheduled for December of this year, what suggestions can you give which will aid exhibitors or the show management in making the Motor Boat Show more valuable and popular with motor boatmen?"

Too Many Five-Figure Boats

(The Prize-Winning Answer)

AS long as there are on display, at the motor boat shows, beautiful cruisers, stunning speed boats, and other craft running into five figures in first cost and requiring a four-figure outlay for maintenance and operating expenses annually, there are a good many motor boat prospects of limited means who will shun the shows in the belief that motor boating is too deep a pastime for economic enjoyment. They are too prone to judge the rule by the exception, and they and the boat builders, dealers, clubs, and show management are all losers therefore.

To stimulate interest in and value from the show, it is time for the boating industry to make an appeal along other lines than the luxury, sporting, and social advantages so extensively emphasized in the past. This is especially the case this year, when, in some quarters, the "calamity experts" are frowning upon even the purchase of his "annual Ford" by some hard-working farmer or plumber.

An educational campaign setting forth the possibilities of boating as a means of healthful, enjoyable, safe, and pleasant recreation and a practical transportation adjunct, available at moderate and established costs, should prove an effective means of arousing new interest and destroying old prejudice. The motor boating industry must cite numerous facts and figures in typical cases to prove such contentions and, to be valuable, they must be definite and exact. To reach a vast class of careful spenders, it must be shown in dollars and cents and hours and work, balanced against sheer utility, satisfaction, and economy, what a prudent boating investment of a moderate sum has done. It is possible to bring to light many cases in which motor boating has supplanted or augmented motoring, bathing, golfing, and other outdoor sports to a considerable extent because of its exclusive advantages. Its safety can be contrasted to the numerous accidents to motoring parties reported almost daily. It can be demonstrated, in side-by-side comparison of old and current models, how the evolution, refinement, and adaptability of the motor boat has been even more marked than that of the motor car, thus dispelling the prejudice of the man who "had a lemon once" or who bases his 1920 ideas on experiences with an early model.

It is up to the entire motor boating industry to co-operate in promoting such an educational campaign before and during the December show. It can not be made fully effective without increased and extended advertising in select general, automobile, industrial, household, fashion, and farm periodicals. When the prospect becomes thoroughly "sold" on the primary advantages of motor boating, he will gladly pay a reasonable price to see an exhibit of boating products. Then it will be up to the manufacturers and dealers to bring into play a little more salesmanship, courtesy, and democracy and less of the luxury, distinction, and extravagance manifested in the past.

D. McC., Detroit, Mich.

Uniform Catalog Sizes Suggested

To improve the last motor boat show held in New York would seem impossible as the last show seemed to outdo all previous shows held in the Grand Central Palace and was a credit to the committee in charge of the event.

We all have ideas, however, some good and others bad, and what the committee in charge of this show try to do seems to be to please the majority.

I would suggest to the committee in charge of the next show to pick yachting weather instead of a real New York snowstorm, some of the boats made slow time arriving, but it takes more than a snowstorm to stop a motor boat.

The decorations of the last show were all that could be desired but I would like to add a little more yachting atmosphere. Why not have all the officials and those representing the various companies showing exhibits dressed up in natty white yachting suits with a commodore and the gold braid to add to the appearance. This would also serve the double purpose of making easier the location of officials of the show, a band on the sleeve indicating the company exhibiting would further improve this suggestion.

Further suggestions would be to set up a yacht club in the center of the floor, this would fly the New York City flag, with a rest room and information bureau inside, around this club I would place the cruisers and other motor boats, there would be an entrance to the club on four sides with the boats anchored and moored between these passageways.

(Continued on page 56)

aft trunk to be arranged so that it may be removable.

Cabin Trunks: Sides and ends of cabin trunks will be of white pine 1½ inches thick, rabbeted ¾ inch over deck edge

knots which will show through paint.

MoToR BoatinG's exhibit at the last motor boat show was a good example of what can be done in making an attractive display

As an attraction it would improve things if the folders and data sheets as given out by the various companies should be made up more attractively, to be kept as souvenirs of the show. For instance, instead of giving out a plain sheet on propellers, why not make these up with a pin model attached. A firm having a cruiser for sale would hand out a miniature paper cruiser attractively designed and yet all the information would be there as required. These could be given to the little folks after the older ones were through looking them over; this idea would apply to all firms showing exhibits at the show.

A little more attention to uniformity in the size of circulars and printed matter would also tend to save paper and make easier the filing of the many catalogs. If boat builders would show a completely built section through their boats it would give a good idea and leave a good impression as to the construction of the boat. More highly colored marine pictures would add to the appearance on the second floor where the details are shown.

To make things interesting and if allowable would suggest that each ticket bear a number and the one having the lucky number would at the end of the show receive a boat.

Moving pictures of the recent motor boat races and the various cups as fought for would prove interesting and add somewhat to the sport of seeing motor boating from dry land to prepare early for the coming season.

W. R., East Elmhurst, L. I.

Frills and Brass Not Wanted

Having attended all the shows for the last few years, I feel I can safely state that the greatest trouble with them all has been and still is that there is too little to buy for the average man. Those who already love the water can lose nothing and can marvel at and admire the wonders that modern boat builders achieve, but it is indeed unfortunate for the beginner who is willing, nay anxious to begin his or her nautical career, and has to go away disappointed, for there is nothing in reason to buy. It is up to him to either buy some second-hand junk that some one wishes on him and after a season's troubles quit the water altogether or buy a flivver and go boating with his friends.

Everybody's cruiser, Cruisette, Red Bank Cruiser, these are a step in the right direction, but not far enough. They are what everybody would like to have whether they can afford to or not.

The boat that is really wanted is somewhere between the cruisers mentioned above and an open dory. It should be about as follows:

1—Plain, not ornamental, galvanized fittings are good enough. The time saved polishing brass can be well spent otherwise.

2—Economical, not a gas eater. If a man wants to go to New London in a hurry let him take a train. A cruiser has time to spare.

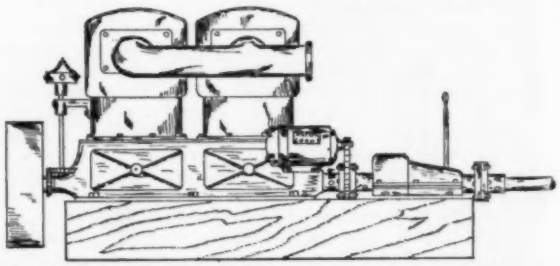
3—Fully found, not equipped. We want good anchors, running lights, ropes, and a dink with our boat, but no fancy instrument board with a lot of dewdads and brass work.

4—Medium duty engine, not high speed motor. Rather make a trip to the fishing grounds than to the mechanic's.

5—Comfortable, not luxurious. If it's the right boat we'll have so much fun we'll sleep where we lay down and won't need fancy woodwork and furnishings.

Offer a strongly built, seaworthy hull, fully found as to essentials, and let buyer add extras if he wants them. Give your money's worth and don't ask the buyer to take anything not absolutely necessary.

J. B., New York, N. Y.



W. B. M. suggests an electric starter chain connected to a coupling

Attaching a Self-Starter to a Marine Motor

Suggestions for Attaching This Modern Equipment to Some of the Earlier Model Marine Motors

Answers to the Following Question Published in the July Issue

"Would it be practical to attach a self-starter to a marine motor now installed in a boat? If so, what are your suggestions for doing so?"

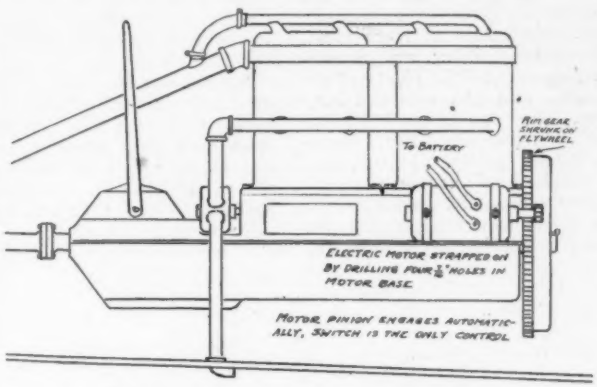
Attaching an Electric Starter

(The Prize-Winning Answer)

TO-DAY even the flivvers are equipped with electric starters and they have been standard equipment on other cars for years. Starters are also manufactured with brackets, etc., for attaching to the older models not so equipped.

The up-to-the-minute marine motor now has a built-in starting and lighting system and several manufacturers sell their product with or without self-starters. It is even practical to attach an electric starting outfit to a motor built without provision for same without removing the motor from the boat.

The motor-generator starting and lighting systems have demonstrated their merits on automobiles and this system will be found the most satisfactory to install on any but the marine motor built to receive the separate units. In this system the motor and generator (combined in one machine) operate continuously. You simply close the ignition switch which also closes the circuit between the storage battery and the starting motor and the engine is turned over until it picks up on its own power when an automatic cut-out breaks the motor circuit and the same machine immediately operates as a dynamo, charging the battery. On other similar systems it is also necessary to push a starter pedal to close the circuit.


To Battery
Pinion gear shrunk on flywheel
Electric motor strapped on by drilling four ¼" holes in motor base.
Motor pinion engages automatically, switch is the only control

Shrink a gear wheel on your flywheel says E. L. C.

There are several single-unit starting systems on the market, no two of which are constructed exactly alike, but they all follow the same general principle, and while manufactured for automobile motors, can be attached to marine motors of any type. When of a proper size and installed in a workmanlike manner the outfit will deliver the service for which it was intended. All of the motor-generator systems are necessarily positive drive either by means of silent chain or gears.

There is nothing against the separate unit systems except the difficulty of attaching the starting motor drive to the engine in a satisfactory manner. The method generally used drives through a gear on the flywheel. As the starter pedal is pressed the gear on the motor shaft engages the large gear on the flywheel and the motor circuit is automatically made at the proper time. Different systems vary, and the chain drive is sometimes used.

Should you decide to attach an electric starting system to the motor installed, a few postage stamps will put you in touch with reliable starter manufacturers or distributors. When writing mention the number of cylinders, bore and stroke, and whether two or four cycle, so that the manufacturer can recommend the proper size outfit. Your garage man should be able to give reliable information on the subject of starters and their installation. When deciding the make don't choose on price alone. Consider the mechanical construction and what you get in auxiliary fittings and service. The higher priced outfit may cost less when installed. Follow the manufacturer's advice and instructions. Nothing definite to apply to all installations can be given here but the following suggestions may help:

When the manufacturer does not furnish suitable brackets for attaching to the motor they may be forged to templets or cast from patterns. In some cases it might be necessary to attach the starting motor to the engine-bed by means of iron brackets rather than wooden makeshifts.

The location of the drive-chain sprocket on the crankshaft and the method of fastening it is important. Whether the sprocket is attached at the flywheel end in place of the hand crank or on the after end between the reverse gears, can only be decided by carefully considering the construction and location of the engine and starter, and the advisability of doing away with the hand cranks or devising a method of using it with the starter attached. An arrangement which does not interfere with the hand crank is preferable, also provision must be made for guarding and lubricating the drive.

All wiring in the starting circuit must be extra heavy on account of the large volume of low-tension current used, and all joints or terminals soldered on. Without special instruments for that purpose it is not possible to meter the starting current. The charging ammeter would be ruined.

On boats having ample generator and storage battery capacity, and a rear starter already attached to motor it is possible to substitute an electric starting motor for the hand crank, adjusting the chain to the starting motor position. The crank-releasing device will disconnect the starting motor as soon as the engine starts.

W. B. M., Newburgh, N. Y.

How to Attach an Electric Starter to an Engine Already Installed

Take off your flywheel and you will find plenty of companies in this country who will shrink on a ring gear to fit the pitch of the pinion gear on your starting motor. Your starting motor should be of the cylindrical type, with an offset armature which slides into a central position in the magnetic field, against a spring, when the starting switch is in contact. This brings the pinion gear on the starting motor shaft into mesh with the ring gear which you have had shrunk on to the outside of your flywheel, and cranks the motor. When you release the switch the armature and shaft of the electric motor jumps back and releases the gears again.

Installing this system is very simple. Two steel straps come with the starting motor and you may have to drill four holes for 3/8-inch or 7/16-inch cap screws to hold the end of the straps to some part of your engine base. You will probably have to shim the starter a little to make the gears mesh just right. All this last will depend on the make of engine. It is very easy on a four- or six-cylinder machine, but you would have to have the blacksmith make two brackets for a one-cylinder motor.

With the system I have described you must have a separate generator for charging your storage battery. I have assumed that you already have this if your motor is already installed and also an automatic charging switch. Probably the battery already in your boat is not quite heavy enough to crank your motor so you may trade it in for a larger one. If you once use a starter you will never want to get along without one again.

E. L. C., Cambridge, Mass.

Protecting and Stowing Foodstuffs

Suggestions for Keeping Provisions and Perishable Supplies Wholesome on Board a Small Boat

Answers to the Following Question Published in the July Issue

"What methods have you devised for protecting foodstuffs in your larder? Illustrate with sketches any novel form of container or unusual method of storing."

Storing Food Supplies

(The Prize-Winning Answer)

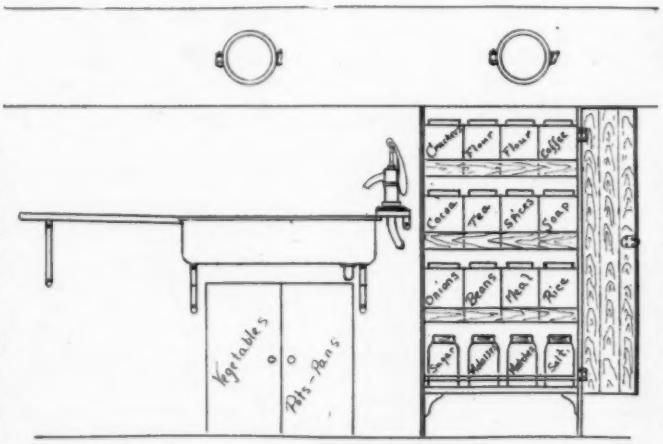
ONE of the most difficult and annoying problems on the ordinary small boat is the one of storing provisions and supplies so that they will remain fresh and wholesome. A solution which has been found thoroughly satisfactory in actual service is described below. It is such a simple device that sketches are hardly necessary or required and a description will answer every purpose.

Temperature, as is well known, is the prime cause of the difficulties involved in keeping foodstuffs in good condition. When temperatures run higher than 50 degrees foods are apt to spoil. Temperatures under 50 degrees will generally serve to preserve foods. Such perishables as fresh meat, milk, eggs, butter, etc., will not keep under any circumstances except under direct refrigeration with plenty of ice to keep them as cold as possible. Canned goods will keep under most any circumstances. They can be stowed away in cupboards, lockers, etc., without difficulty. Fresh vegetables, such as beets, carrots, beans, cabbages, lettuce, etc., available in the summer time, can be easily kept in excellent condition for a long time if they are stowed properly.

For such cruisers as must stock provisions enough for several months at a time, there is nothing superior to the open-air method of storing vegetables in wire-mesh lockers as is done in the Navy. Most of our small boats, however, have no need for such elaborate methods and simpler practises are sufficient.

A locker which will serve admirably for storage of what might be called the less perishable varieties of food, can be easily constructed. Practically all boats are equipped with berths of some form in the interior or cabin space. Ordinarily the space below the berths and the skin of the boat is used to stow a miscellaneour collection of oil cans, lines, a spare anchor, the fog horn and some other of the unessential impedimenta of motor boating. By lining this space right up to the under side of the berths with a sheet-zinc liner, we secure at once a watertight receptacle into which the bilge water and moisture will not penetrate. Being in most cases well under the waterline, this space will always remain cool. The temperature of the sea water does not rise very high and remains more or less constant at all times. The hot rays of the sun are kept off this space by the cabin house above and it is kept cool underneath by the closeness of the sea water. Several of these compartments can be provided as described and will serve excellently to keep all sorts of stores dry and in good condition. Blankets and other spare articles, as well as foods of all kinds, except those requiring ice for their safekeeping, can be readily and safely preserved in a locker as described for a longer period than they would ordinarily be required to be kept on a cruising boat. The consumption of food and other items being continuous, stores are circulating all the time and need replenishing just as fuel and oil tanks do. The wisest policy with perishables being, of course, to use up old stocks before the new ones and never to lay in more supplies than will be used up in a reasonable amount of time.

W. E. H., New York, N. Y.



Cupboard arrangement for storing food supplies suggested by E. L. C.

Preservation Without Ice

An old adage says that "the way to a man's heart is through his stomach." Feed him well and he will do anything good naturedly. Motor boat crews are no exceptions, but it is up to the man as owner or captain of the boat to make it possible for the ladies to prepare the good things to eat. Foodstuffs must be protected and kept fresh, especially butter, meats and milk. A temperature of 50 degrees is generally considered safe for meats, etc., for a few days. Canned and package goods require only to be kept dry. An ice-box is very convenient and efficient but ice is often hard to get or there may be no place for one on the boat.

Should you have no ice-box, a fireless cooker will make an admirable substitute. If the cooker will prevent the escape of heat it will also prevent the entrance of heat the same as a large vacuum bottle. Ice or cold spring water may be used to lower the temperature, or the various articles of food may be cooled and placed in the airtight compartment, where they will keep for days with but a slight raise in temperature.

A water refrigerator is an excellent device for keeping perishables without ice. The articles to be cooled are placed in airtight containers, which are kept in a slat or light wood frame box covered with wire cloth commonly used for window screens. On top of the box is placed an earthenware dish partially filled with cold water. The entire box is wrapped in burlap, or other absorbent material, the ends of which are submerged in the water, and the whole outfit placed in the shade in such a position that a current of air can circulate around it. On the shady side of the boat in front of a port or under a ventilator will be found satisfactory.

A modification of the water refrigerator may be adopted for bottles of milk, cream, etc. Wrap the bottels in damp cloths and place them in an earthen dish filled with cold water.

Such articles as meat, butter, etc., may be kept cool by placing them in airtight containers and inverting an ordinary flower pot on them instead of wrapping.

Prepare the refrigerator morning and night by filling the dish with cold water.

Refrigeration is not accomplished by making cold, but by the extraction of heat through the expansion of a liquid into a gas or by evaporation.

The principle of the water refrigerator is as follows:

Evaporation requires heat, and as the water evaporates from the burlap wrapping, heat is absorbed from the nearest source, which is the container and its contents. As the water evaporates from the wrapping a new supply is taken up by the capillary attraction of the material and the process is continuous. The draft naturally assists evaporation.

Meats may be preserved chemically but this method is considered injurious by the U. S. Department of Agricul-

(*Continued on page* 80)

The Way We Would Do It

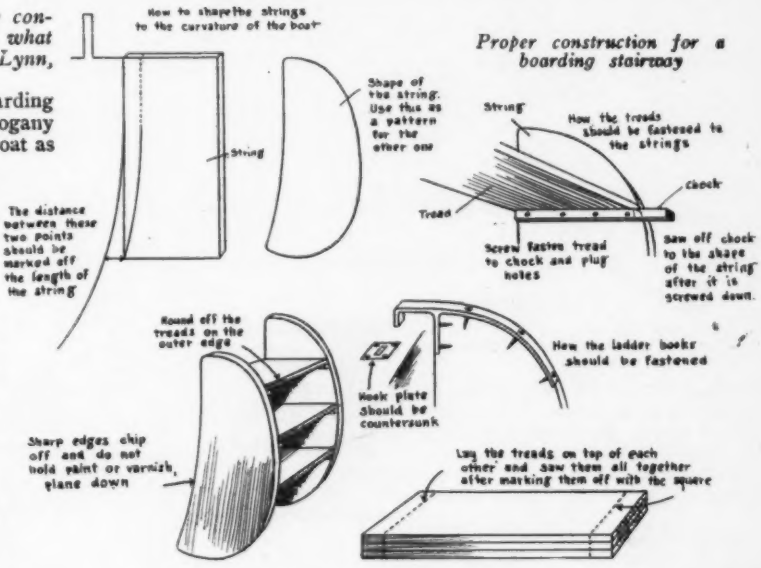
Conducted by F. W. Horenburger and A. E. Snyder

EVERY month MoToR BoatinG's staff of experts answers thousands of inquiries about boats, engines, accessories and, in fact, everything marine. There is hardly a branch of the sport or industry on which they are not constantly being asked to give their opinions. They are very glad to do this, as well as to be of whatever service they can to MoToR BoatinG's subscribers and readers.

Quite naturally, many requests for information are received on subjects which are not of universal interest to every motor boatman. This, as well as the fact that it would be a physical impossibility to print answers to all questions received, makes it necessary for us to follow the rule of only printing answers to the few most important and interesting questions. However, we always give a reply by mail, so if you are perplexed about any questions pertaining to boating don't hesitate to write to "The Way We Would Do It" Editor.

Can you tell me how to undertake the construction of a set of boarding steps, and what form of hardware to use for this?—B. N., Lynn, Massachusetts.

The simplest method of constructing boarding steps is to take two suitable oak or mahogany pieces and shape them to the side of the boat as indicated on the sketch. A sufficient number of treads should then be prepared and attached by means of screw-fastened cleats. The ladder hooks are a stock fixture which can be obtained from most marine hardware dealers.


How to shape the strings to the curvature of the boat
Shape of the string. Use this as a pattern for the other one
String
The distance between these two points should be marked off the length of the string
Round off the treads on the outer edge
Sharp edges chip off and do not hold paint or varnish, plane down
Hook plate should be countersunk
How the ladder hooks should be fastened
Lay the treads on top of each other and saw them all together after marking them off with the square

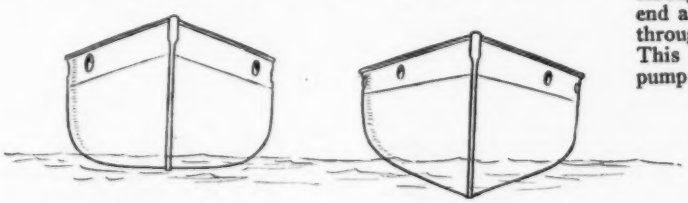
Proper construction for a boarding stairway

String
How the treads should be fastened to the strings
Cleat
Tread
Screw fasten tread to cleat and plug holes
Saw off cleats to the shape of the string after it is screwed down

* * *

I have converted a dory into a cruiser by the addition of a cabin, but am not satisfied with the results obtained. The boat pounds heavily in a sea-way and is quite uncomfortable. Can you give me a reason for this?—A. M., Boston, Massachusetts.

It is apparent that the lines of your boat are not intended for the additional weight due to the cabin house which was added. The flat bottom construction of the dory will tend to cause pounding in a sea-way and there is no way of remedying this without rebuilding the entire boat. The deeper V-sections of the accepted type of hull are much more suitable for the additional weight than the flat bottom type such as yours.



Shape of the hull has much to do with the pounding

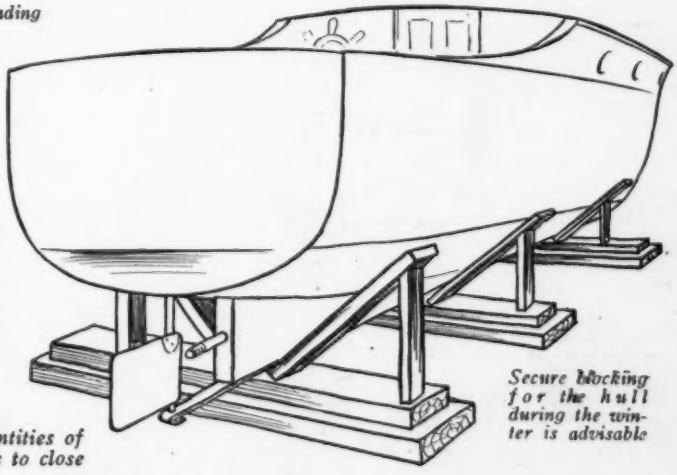
My boat has suffered some damage due to improper blocking while it was laid up during the past winter. Can you suggest proper ways of supporting the boat when it is laid up so as to avoid further damage in the future?—Y. D., Newark, N. J.

The principal item to be looked after in blocking a boat is the proper support along the keel. Timber supports at frequent intervals along the length of the keel or about 6 to 8 feet apart and properly aligned so that their tops are in a straight line will furnish sufficient foundation. Braces of planking propped as shown in the sketch will tend to hold the boat vertical without causing any undue strain at any point.

* * *

I am troubled by an accumulation of sawdust and foreign matter in the bilge of my boat. Quantities of this have been removed but still sufficient remains to close up the limber holes in frames. What can I do to clear this?—G. D. L., Atlantic City, N. J.

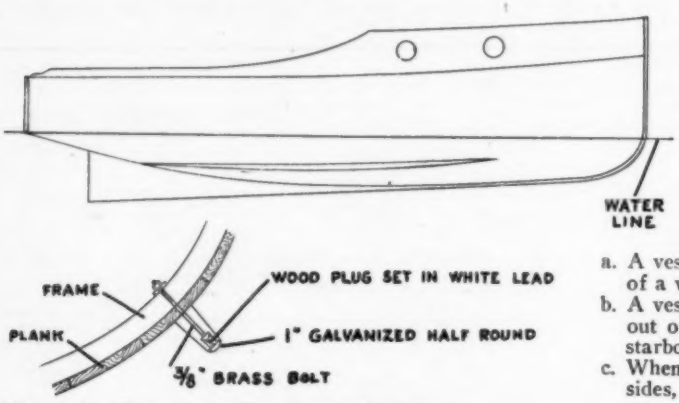
We would suggest that you draw a brass sash chain through the limber holes from forward to aft. On each end add a brass spring so that when the chain is pulled through the limber holes the spring will retract the chain. This will serve to keep the holes open and permit the pump to clear a lot of this fine debris out with each pumping. There is no way of getting this sawdust out after the boat is completed except by the exercise of patience and muscle.



Secure blocking for the hull during the winter is advisable

I would like to add bilge keels to my cruiser, and write to ask for information as to the proper method of doing this.—T. G. A., Jacksonville, Florida.

It is rather a ticklish operation to attach bilge keels properly. It is absolutely necessary for them to run in a straight fore and aft line so that they do not offer any resistance in passing through the water. We would suggest an oak keel about 1¾ by 4 inches tapered to the hull on both ends, and about 35% to 50% of the length of the hull. This can be fastened by means of brass or galvanized iron through bolts to the frames as shown.

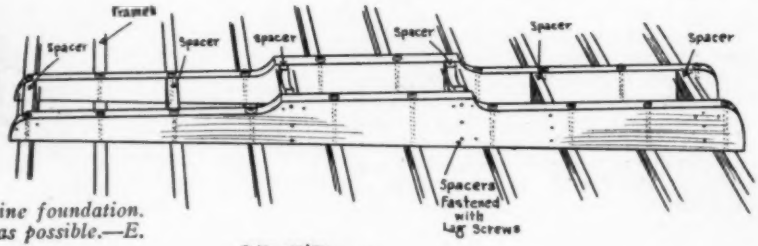


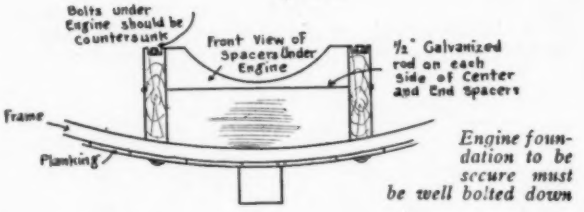
Bilge keels will prevent rolling to some extent

* * *

In installing a new motor in my cruiser I would like some advice concerning the engine foundation. I would like to overcome vibration as much as possible.—E. D. S., Detroit, Michigan.

Our sketch will give you a very satisfactory idea of a most suitable engine bed for your boat. A pair of 2 by 10 inch spruce or yellow pine girders are shaped about as indicated and through-bolted to the frames. A spacer or separator is introduced at intervals to keep the girders from spreading. Substantial galvanized fastenings should be used throughout and all parts should be well bolted together.




Bolts under Engine should be Countersunk
Front View of Spacers Under Engine
½" Galvanized rod on each Side of Center and End Spacers
Frame
Planking

Engine foundation to be secure must be well bolted down

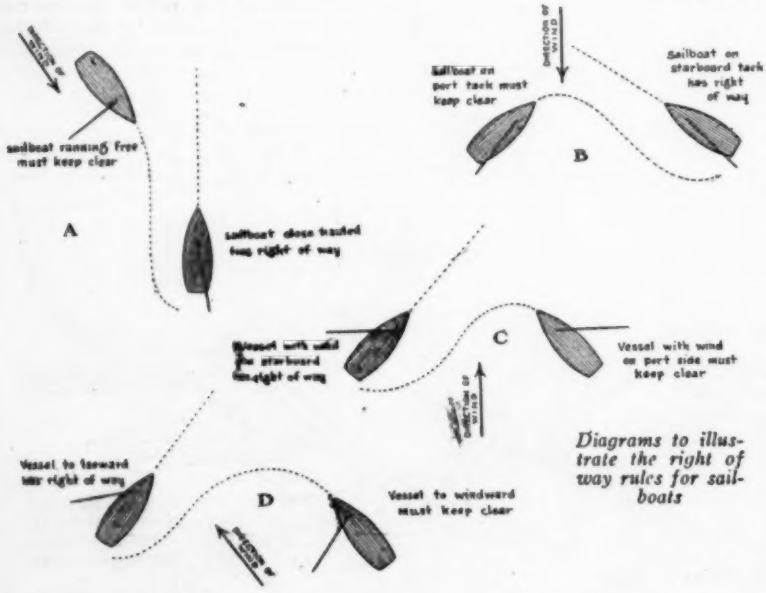
* * *

Can you give me an explanation of the right-of-way rules covering sail boats? There seems to be some difference of opinion as to which boat has the right-of-way under various conditions.—R. N. D., Port Jefferson, Long Island.

We cannot do better than quote from the International rules of the road covering this point, and our illustrations with this explanation should cover your inquiry.

"When two sailing vessels are approaching one another so as to involve risk of collision, one of them shall keep out of the way of the other, as follows, namely:

a. A vessel which is running free shall keep out of the way of a vessel which is closehauled on the starboard tack.
b. A vessel which is closehauled on the port tack shall keep out of the way of a vessel which is closehauled on the starboard tack.
c. When both are running free, with the wind on different sides, the vessel which has the wind on the port side shall keep out of the way of the other.
d. When both are running free, with the wind on the same side, the vessel which is to the windward shall keep out of the way of the vessel which is to the leeward.
e. A vessel which has the wind aft shall keep out of the way of the other vessel.


DIRECTION OF WIND
sailboat running free must keep clear
A
sailboat close hauled has right of way
sailboat on port tack must keep clear
Sailboat on starboard tack has right of way
B
Vessel with wind on port side must keep clear
C
Vessel to leeward has right of way
Vessel to windward must keep clear
D

Diagrams to illustrate the right of way rules for sailboats

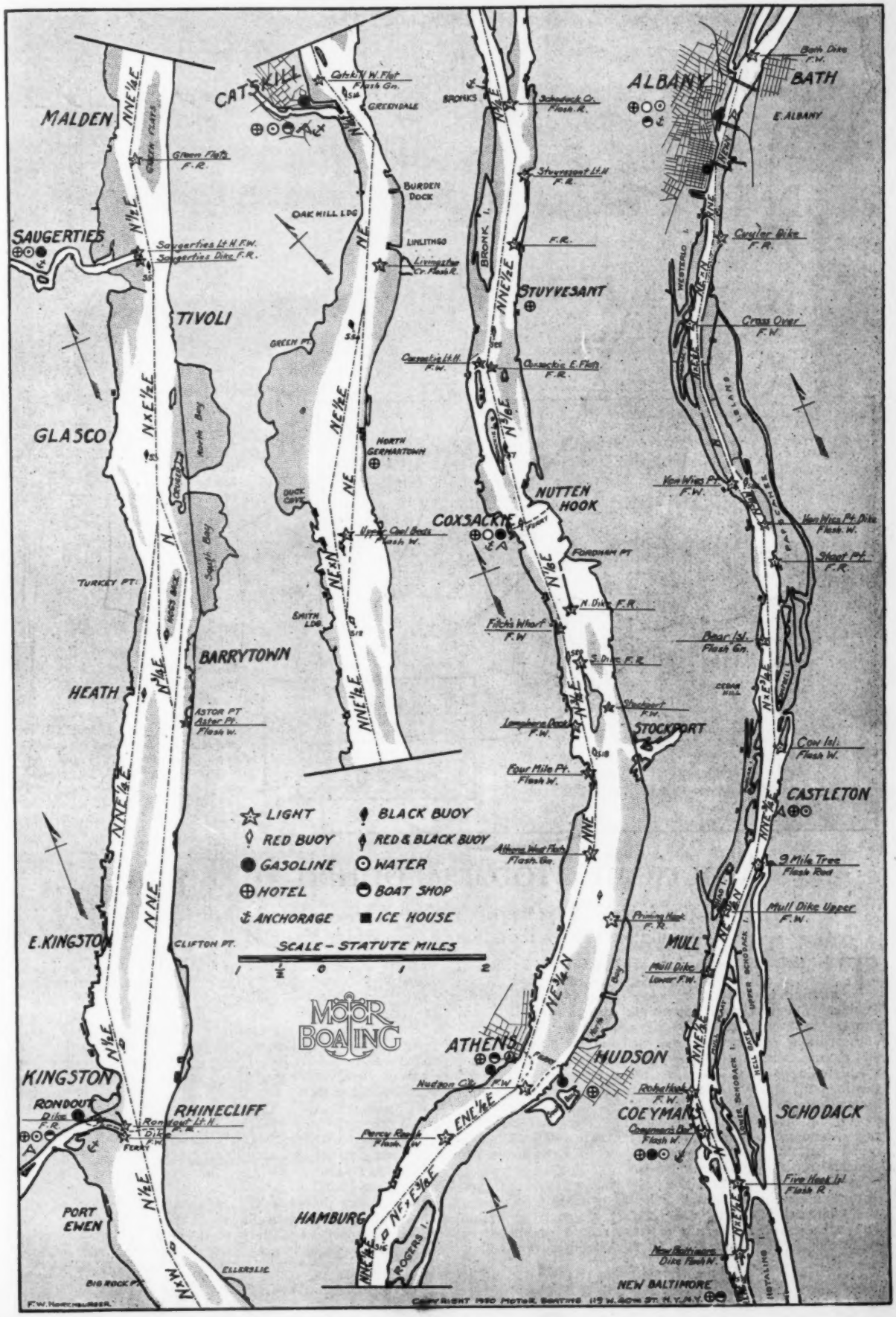
* * *

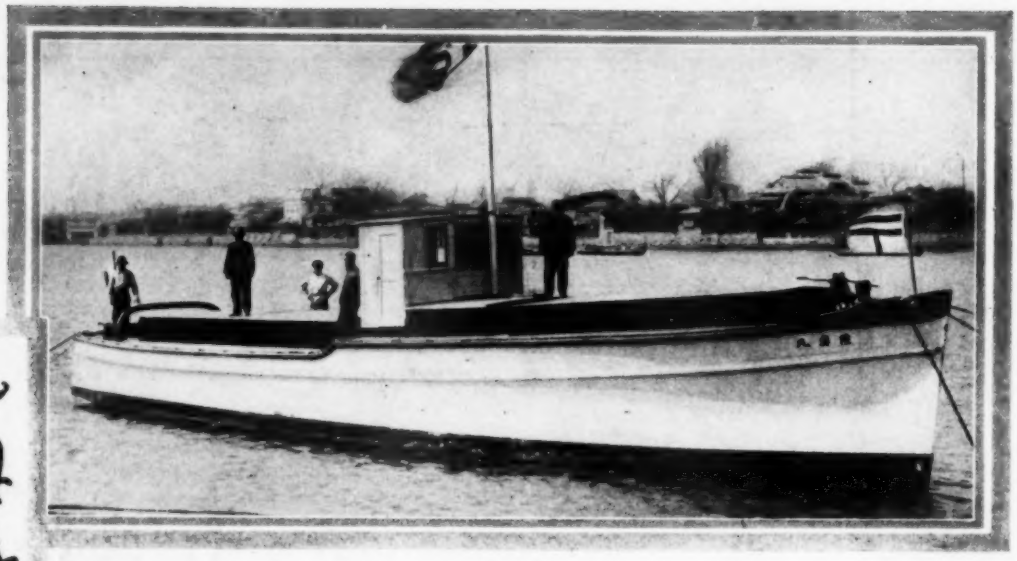
My storage battery runs down very rapidly and I find that my vibrator points pit and burn faster than I believe is necessary. Can you give me a possible reason for this?—S. C. T., Mamaroneck, N. Y.

Your electrical outfit is apparently in bad adjustment. It seems as though your vibrator points are too tight. This will cause rapid burning of the points. A large gap at the spark plug points will also account for the excessive current consumption. The gap should be no greater than will pass a well-worn dime between the points.

Motor Boatmen's Chart No. 11—Hudson River, Kingston to Albany

For Use with Coast & Geodetic Survey Charts Nos. 283 & 284





丸興産

The 60 - foot motor boat MUTSU-MARU, built by the Sumidagawa shipyard in Tokyo, powered with a pair of 40 h.p. valve-in-the-head motors, completed a long trial trip of 850 miles without a hitch

Diagram map of the route covered by the MUTSU-MARU in her long journey from the builders' yard in Tokyo to her station at Aomori

American Motors Popular in Japan

Trial Trip Reports of a New Japanese Mail Boat Equipped With a Pair of American Made Knox Motors

THE Orient is awakening. The customary bustle and speed, characteristic of the modern American, is beginning to infect our Japanese neighbors across the Pacific. The increased importance attached to the rapid transportation of mail and merchandise by the Japanese authorities is evidenced by the demand for reliable boats and motors to accomplish these results.

Shipbuilding yards in Japan are thoroughly capable of turning out very satisfactory jobs. Many local manufacturers are also engaged in building gasoline and heavy oil motors but their workmanship cannot be said to be as good as can be desired. Some of these Japanese concerns manufacture hot-bulb vertical type motors, copies from the earlier model European crude oil engines.

In this promising field the modern American gasoline motor is beginning to appear. The Knox Motors Associates of Springfield, Massachusetts, recently received word from Tokyo, Japan, of a new long distance record established by Knox motors in Japan. Two of these well known 40 h.p. valve-in-the-head motors were installed in a new mail boat, Mutsu-Maru, owned by the Communications Superintendent of the Department of Communication of Japan and built by the Sumidagawa Shipyard.

On completion of the boat it was run under its own power from Tokyo to Aomori, a distance of 850 miles. Much interest was manifested in the voyage as it was the first long distance voyage ever made in Japan by a motor boat. The boat was in charge of O. Sugiura, a superintending engineer from the shipyard, and was manned by an inexperienced crew of eight workmen from the shipyard.

Much rough weather was encountered in the open Pacific but no trouble of any kind developed with these motors on this 22-day trip. The Mutsu-Maru whose dimensions are 60 ft. x 12 ft. x 7 ft. traveled at the rate of 9 statute miles miles per hour propelled by these two Knox motors and consumed 710 gallons of gasoline.

The Mutsu-Maru has now been placed in regular service as a mail boat and is giving very satisfactory service.

Yard and Shop

Notes of Interest to Both Owner and Manufacturer

Barge Canal Service Boats

In order to properly look after the numerous buoys and lights along the New York State Barge Canal, the Albany Boat Corporation of Watervliet, New York, is finishing thirty-five boats 26 x 6 feet powered with four-cylinder model VM Gray motors. Their convenient location and ability to turn out a complete and standardized boat was the prime factor in securing this contract.

The Canal is being used largely for the shipment of automobiles in barge load lots from the numerous plants on the Great Lakes to tidewater. Water shipment eliminates the wear and tear involved when cars are driven over the road and results in their being delivered in a new condition in New York. Several manufacturers are already shipping this way and it is expected that many others will see the advantages of the Barge Canal.

The Albany Boat Corp. is building 35 motor tenders for inspection and maintenance work on the New York State Barge Canal

Arrow Motor & Machine Company Moves

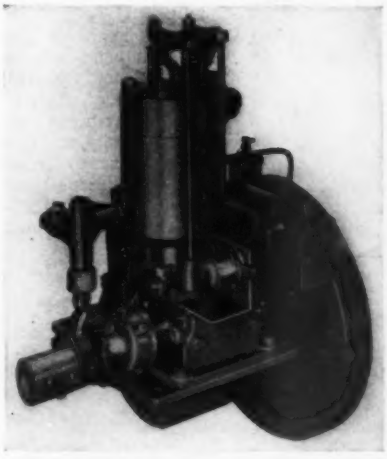
Removal of the plant of the Arrow Motor and Machine Company to a new factory building at 727-729 Frelinghuysen Avenue, Newark, N. J., is announced. They are the manufacturers of the well known Arrow motor which is produced in sizes from 2½ to 6 h. p. as well as in outboard detachable models of 3 h. p.

The Maynard-Adams Motor

A popular little motor manufactured in Berkeley, California, is the Maynard-Adams of 3½ h. p. It is equipped with magneto ignition and overhead valves. It makes a compact, sturdy little outfit which is widely used for small boats on the west coast. A double cylinder model of 8 h. p. is also built which is similar to the single cylinder machine.

Cotton Waste

The ideal cleaning material for motor boat users and home work shops is furnished in neat little packages containing one pound of waste. This is a most satisfactory way in which to buy and keep this handy material. The Massasoit Manufacturing Company of Fall River market this product under the trade name of Masco waste. In addition to this, they manufacture deck mops, dish mops, cleaning cloths of various kinds, and an excellent grade of caulking cotton.



The Maynard-Adams marine motor, manufactured in Berkeley, Cal.

Sir Thomas Lipton donated this $4,000 trophy to the Gulf Coast Yachting Association. The Southern Yacht Club is the perpetual trustee of the trophy

Facts About Olomel

As a substitute for red lead on all forms of metallic work requiring protection from corrosion, Olomel is a cheaper and better product. It comes in the form of a solution, a compound, and a putty. It is used to waterproof joints between steel plating and structural shapes. Clips and bulkhead bars packed with Olomel do not require caulking.

Hacker Boat Beat Smith Craft

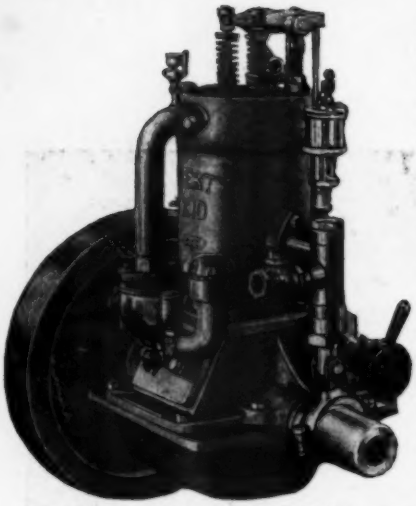
Sure Cure of Detroit, a dark horse in the motor boat world, developed as a possible contender for the world's speed boat championship by defeating Miss Nassau, the present title holder in races at Erie, Pennsylvania. Last winter at Miami Miss Nassau succeeded in beating all contestants. She is equipped with a 435 h. p. Grant Liberty motor and is of the famous Smith design. Sure Cure is also powered with a Smith Liberty motor of about the same h. p. but is a Hacker creation. The 20-mile course was covered by Sure Cure in 34 minutes and 3 seconds.

Charles Narraway Sails

The Vice-President of the Niagara Motors Corp., Charles Narraway, sailed for Europe not long ago. He intends to combine business with pleasure and call on various agencies of Niagara Motors Corp. throughout England, France, Holland, Belgium, and Denmark. The export business of Niagara Motors Corp. has increased extensively during the past few years and it is hoped that a personal visit will aid greatly in facilitating the export difficulties at this time.

International 32's Moving Fast

The popularity of the International 32's has been growing, as is evidenced from the way they have been going overboard at the plant of the Interna-



The Liberty Kid motor of 3½ h.p. uses standard Ford parts

tional Ship Building and Marine Engineering Corp. at Nyack, New York. Many would-be owners of these boats have visited the plant, inspected the boats, and then begged to have their orders taken, only to be refused because the concern already has all the orders that can be completed during the summer. The boats already built have gone to many parts of the country. Tamasese went to Nantucket, the Nereid went to Beverly, Mass., the Effie is at Hyannisport, Cape Cod; others are in the vicinity of New York, Newburgh, N. Y., and also Providence, Rhode Island. Several others have made the journey to Washington and Annapolis under their own power, and are working successfully for their new owners.

Liberty Kid Engine

A popular little motor on the Pacific Coast is the Liberty Kid. On a bore and stroke of 3¾ x 4 inches this motor will develop 3½ h.p. at 750 revolutions. It is of the four-cycle type with overhead valves operated by cams. A special feature is the fact that Ford parts are used and can be secured anywhere for replacements if necessary.

New Barker Catalog

Beginning its twenty-first season in the manufacture of Barker two-cycle motors, the Barker Factory of Norwalk, Conn., have issued an attractive new catalog setting forth the good qualities of this engine in both the marine and stationary types. This is a sixteen-page booklet printed on coated book paper.

A feature of the new catalog is the listing of the engines by letters instead of by horsepower rating, the power capacity of each being indicated by bore and stroke dimensions.

Barker motors may now be obtained equipped with a jump spark igniter which generates and times the spark, at starting as well as at full running speed, without the use of batteries, coil, or other accessories.

The Barker Factory now plans to establish distributing agencies for Barker motors and repair parts and accessories for these engines at points on the Pacific Coast for the convenience of its customers in the far West. C. L. Barker, designer of these motors expects to reach Seattle early in September and his headquarters there will be at 511 East Roy Street. It is his desire to meet with members of reliable firms which could handle Barker motor service, including engines and parts.

Water-Proofing Leaky Boats

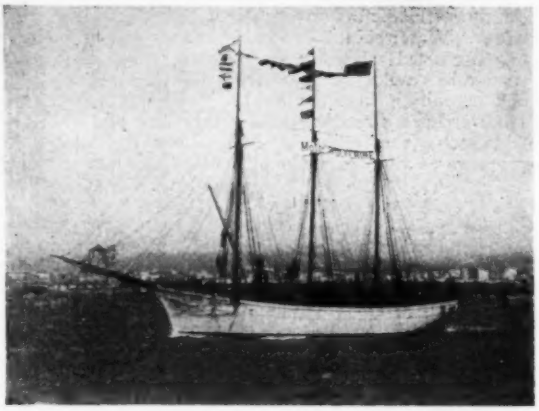
L. W. Ferdinand & Company of Boston send us the following letter from an appreciative user of their marine glue:

"With eight pounds of your No. 7 black glue I followed directions in circular and succeeded in making a lap streak round bottom boat that had been thrown away as useless, perfectly water-tight and have refused $50 for it. I shall buy up all the leaky round-bottom boats I can get and after giving them your treatment sell them at a profit."

Eastern Stock of Hall-Scott Parts

The Eastern Sales and Service Branch of the Hall-Scott Motor Car Co., which is located at 39 Associated Service Building, Buffalo, N. Y., announces that a carload of Hall-Scott marine engines and parts has been shipped to them from the factory at Berkeley, California.

These engines will be held in stock at Buffalo and will be available to take care of all eastern orders calling for immediate shipment—a fact that should be greatly appreciated by all buyers in the East.



New Spanish schooner Nuevo Palma, 110 feet long, 26 feet beam, 320 tons capacity. Equipped with a 160 h.p. Wolverine gasoline engine

Bosch Company Expands

Announcement is made that the Gray & Davis Company, Inc., of Boston, have been absorbed by the American Bosch Magneto Corp., of Springfield. The starting, lighting, and ignition systems, together with other automotive accessories, manufactured by the Boston concern, will be sold exclusively by the Bosch Company.

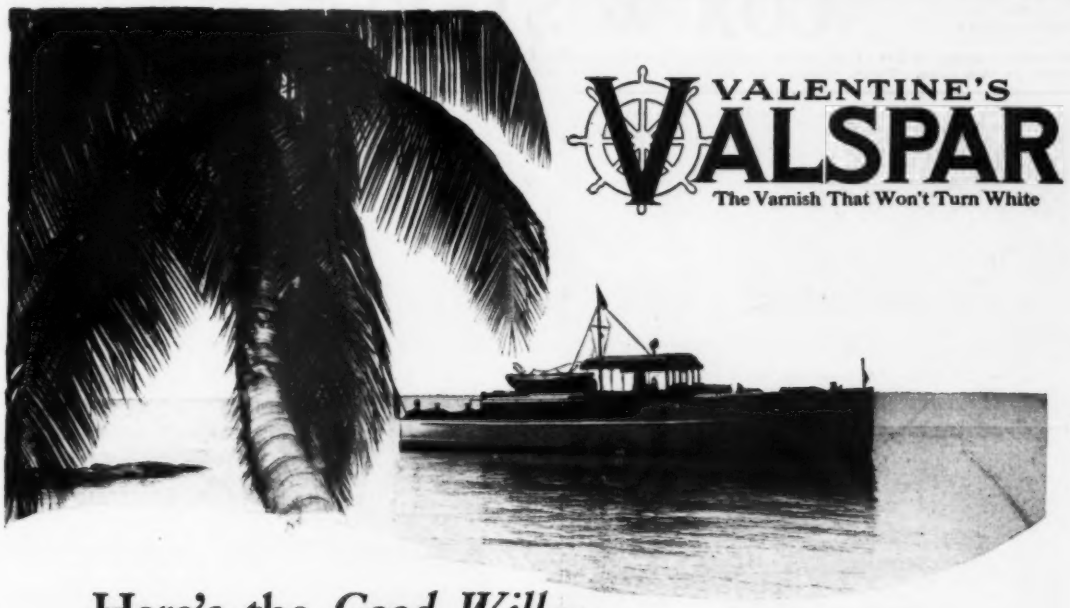
The officers of the new company have been selected from among the experienced executives of both concerns, and the management today is planning an enlarged production and an active selling campaign.

Swiss Want Motors

The Werner Risch Co., Utoquai 29, Zurich, Switzerland, wish to receive literature from manufacturers of marine engines and accessories.

(*Cont. on page 60*)

The busy machine shop of the Gray & Prior Machine Co., Hartford, Conn., is rushing work on many motors to be shipped



VALENTINE'S
VALSPAR
The Varnish That Won't Turn White

Here's the *Good Will*—
And she's Valsparred, of Course!

DESIGNED especially for cruising in that California fairyland, around the Catalina Islands, this luxurious 54-foot cruiser is finished in mahogany throughout.

The fogs, mists, rains and hot sun of Pacific waters can have no effect on the *Good Will's* fine woodwork, because she is protected by tough, durable, waterproof Valspar, above decks and below.

The booklet, "How to Use Valspar on Boats," is full of useful varnish and paint tips. We will send it to you on request.

VALENTINE & COMPANY

Largest Manufacturers of High-Grade Varnishes in the World—Established 1832

New York Chicago Boston Toronto London Paris Amsterdam

W. P. FULLER & Co., Pacific Coast

VALENTINE & COMPANY, 456 Fourth Avenue, New York
Special Offer:

For your dealer's name and 15c in stamps, we will send you a 30c samole can of Valspar—enough to finish eight square feet of surface. Fill out Coupon.

Dealer's Name .....

Your Name.....

Your Address .....

M. B.—9-20

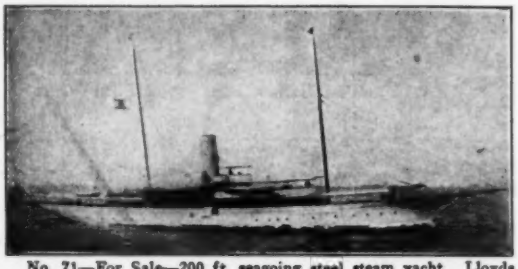
"The Good Will"—built by the Great Lakes Boat Building Corporation, Milwaukee, which uses Valspar Varnish and Valspar Enamels exclusively on its boats. (Photos by Rosenfeld, N. Y.)

Naval Architects and Yacht Brokers

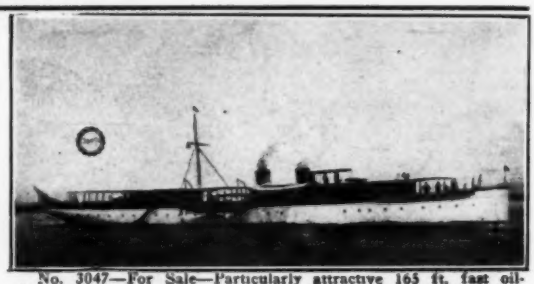
COX & STEVENS

15 William St., New York
Telephone—1375 Broad
Cable—BROKERAGE

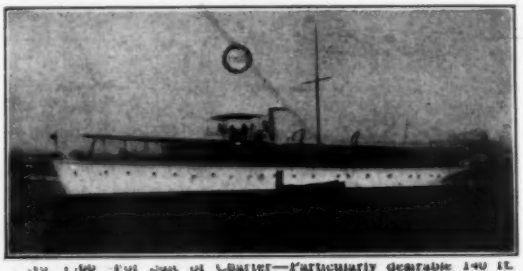
We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars furnished on request.



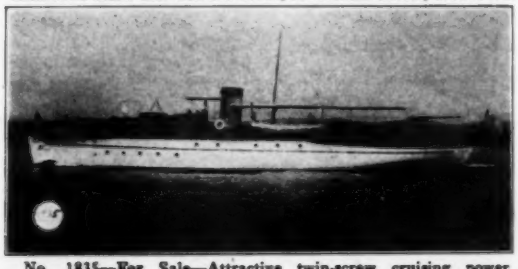
No. 71—For Sale—200 ft. seagoing steel steam yacht. Lloyds highest rating. Cox & Stevens, 15 William Street, New York.



No. 3047—For Sale—Particularly attractive 165 ft. fast oil-burning twin screw, steel steam yacht. Speed up to 19 miles. Beautifully finished and furnished. Large accommodation includes dining saloon and music room on deck, six staterooms and three bathrooms below aft. Cox & Stevens, 15 William Street, New York.



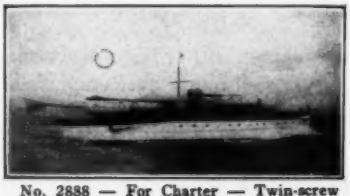
No. 1460—For Sale or Charter—Particularly desirable 140 ft. twin-screw steel cruising power yacht. Speed up to 18 miles; two 300 H.P. Standard motors. Dining saloon and social hall on deck; 3 double and 1 single staterooms, 3 bath and toilet rooms, etc. Recently overhauled thoroughly at large expense. In splendid condition. Cox & Stevens, 15 William Street, New York.



No. 1835—For Sale—Attractive twin-screw cruising power yacht, 98 x 16.6 x 4.6 ft. Speed up to 16 miles. Two air-starting, reversible Standard motors. Large dining saloon, two double and two single staterooms, bathroom and two toilet rooms, etc. Practically in commission. Cox & Stevens, 15 William Street, New York.

No. 1225—For Sale—Twin-screw cruising power yacht; 138 x 15.9 x 7.8 ft. Speed up to 18 miles, two 300 H.P. Speedway motors. Two saloons, three double staterooms, bath and two toilets, etc. Price low. Cox & Stevens, 15 William Street, New York.

No. 979—Bargain—Especially desirable 98 ft. twin screw cruising power yacht. Speed up to 16 miles; Standard motors. Deck dining saloon, three double and one single staterooms, two bathrooms, etc. Teakwood deck house and deck trim. Completely overhauled, new furnishings throughout. In commission. Cox & Stevens, 15 William Street, New York.



No. 2888 — For Charter — Twin-screw Diesel power yacht; 110 x 18 x 6 ft. Speed up to 14 miles; two 150-175 H.P. Craig-Diesel motors. Extremely economical to operate on account low fuel cost and small consumption. Excellent accommodation. Handsomely finished and furnished. Cox & Stevens, 15 William Street, New York City.

No. 4449—For Sale or Charter—Twin-screw cruising power yacht; 90 x 16.6 ft. Speed up to 12½ miles; two 6 cyl. 60/90 H.P. motors. Excellent accommodation. Cox & Stevens, 15 William Street, New York.

No. 3533—For Sale—Fast 72 ft. twin-screw cruising power yacht. Speed up to 17 miles; two 6 cyl. 125-150 H.P. Winton motors. Dining saloon, two double staterooms, bath and two toilets, galley, etc. Cox & Stevens, 15 William Street, New York.

No. 3426—For Sale—High speed Lawley built twin-screw hand V-bottom cruiser; 60 x 10.9 x 3 ft. Speed up to 25 miles; two 130/180 H.P. Van Blerck motors, new 1917. Double stateroom, large saloon, bath and toilet room, etc. Handsomely finished and furnished. Price attractive. Cox & Stevens, 15 William Street, New York.

No. 1997 — For Sale — Cruising power yacht; 81 x 12 x 4 ft. Speed up to 15 miles; 6 cyl. 100-120 H.P. "20th Century" motor. Dining room, three staterooms, toilet room, etc. Cox & Stevens, 15 William Street, New York.

No. 2564—For Sale—50 foot Elco bridge deck cruiser. Built 1917. Speed 12 miles 6 cyl. 60/85 H.P. Sterling motor. Double stateroom, saloon with upper and lower berths, toilet room, galley, etc. Price attractive. Cox & Stevens, 15 William Street. New York.

No. 3469—For Sale—Desirable cruising power yacht; 67 x 13 x 4 ft. Speed 12 miles; 50/65 H.P. Standard motor. Dining saloon forward; two double staterooms aft, toilet room, etc. Large deck space. In commission. Price reasonable. Cox & Stevens, 15 William Street, New York.

Advertising Index will be found on page 142

NAVAL ARCHITECT
ENGINEER
BROKER
MARINE INSURANCE

HENRY J. GIELOW

23 WEST 43rd STREET, NEW YORK

Tel.: Murray Hill 9134
Cable Address:
Crogie, New York
A.B.C. Code

Plans and specifications for new yachts of any size or type should be prepared now to assure delivery for next year. Have plans of new yachts, all types, on file now.

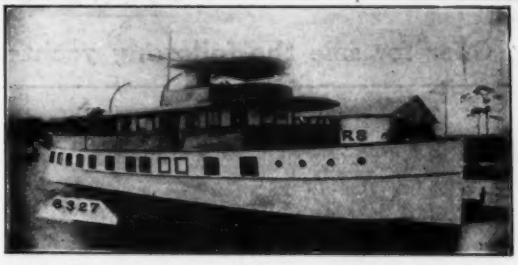
I have a most complete and up-to-date list of steam and motor yachts of all sizes, sail, auxiliary, and houseboats on file in my office, kept constantly up-to-date by a thorough and comprehensive canvass of the entire yachting field from time to time. I am in a position to submit full information on any type of boat upon request.

No. 9597—For Sale—Possibly Consider Winter Charter—Handsome 162 ft. seagoing steam yacht, second to none of her size. Finest condition and perfectly appointed. Cruising speed 12 knots. Steel construction, thoroughly overhauled and refitted throughout, 1919. Mahogany and teak trim. Deck dining saloon and music room. Large bridge deck. Two double and four single staterooms, 2 baths. Ice plant, steam heat. Large water supply and liberal cruising radius. Price reasonable for yacht of size and type. Henry J. Gielow, 23 W. 43d Street, New York City.

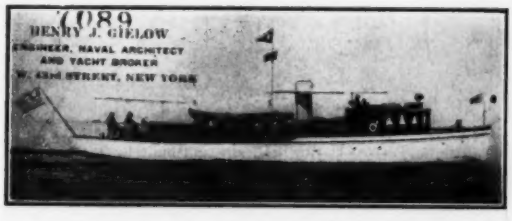
No. 8080—For Sale—Charter—New modern 85 ft. twin-screw cruising houseboat. Deck dining saloon and galley. 2 double, 3 single staterooms. Hot water heat. 3 baths. Shoal draught makes attractive type Florida cruising. Two 50 horsepower motors give speed 10 miles. Good sea boat. Henry J. Gielow, 23 W. 43d Street, New York City.

No. 7297—For Sale—Attractive high grade 48 ft. twin-screw express cruiser. New Van Blerck motors and upholstery 1920. Speed 21-24 miles. Excellent sea boat though shoal draught, and desirable for Southern and Northern use. Two cabins and separate galley. Crew forward. Bridge deck enclosed in removable glass partition. Cockpit aft. Modern in all appointments. Henry J. Gielow, 23 W. 43d Street, New York City.

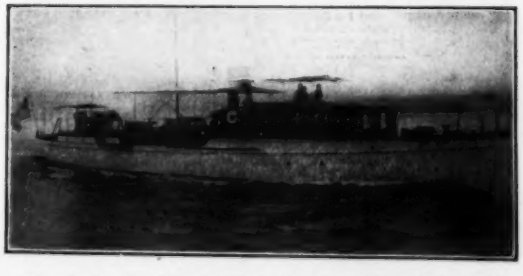
No. 7070—For Sale—Bargain—Attractive 80 ft. shoal draught twin-screw motor yacht, 14 ft. beam. Standard engines, all overhauled 1920. Speed 12 miles. Good sea boat and desirable for South. Four staterooms and main saloon. Galley and dining saloon in mahogany deck house. Good deck space. Completely equipped. Was not in Govt. service. Launch and row boat. Owner anxious to sell. Henry J. Gielow, 23 W. 43d Street, New York City.



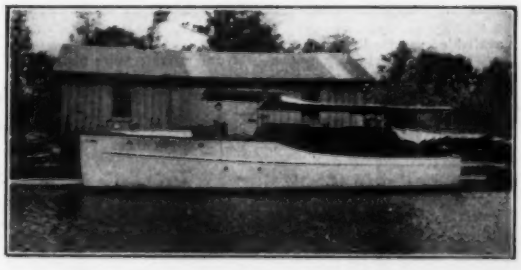
No. 6327—Sale—Charter—New 98 ft. cruising houseboat located Southern waters. Modern in design and appointments. 100 horsepower motor gives speed 10 miles. Hot water heat. Deck dining saloon and living room, also owners state room. Below are 2 double and 4 single staterooms. Most desirable type of Florida cruiser. Henry J. Gielow, 23 W. 43d Street, New York City.



No. 7089—For Sale—Price Low—Modern 78 ft. twin-screw motor yacht in finest condition. Entirely overhauled 1920. All new furnishings supplied. Accommodations are deck dining saloon, three staterooms, saloon and bath. Large galley. Standard motors. Speed 12 miles. Good sea boat. Owner purchased larger yacht reason for selling. Seen New York. Henry J. Gielow, 23 W. 43d Street, New York City.



No. 7040—For Sale—Bargain—Modern Lawley built 96 ft. twin-screw motor yacht, 15 ft. beam; Standard motors, speed 11 miles. Deck dining saloon, 2 double staterooms, accommodate seven. Economical, can run with 4 crew. Able sea boat. Furnishings new 1919, includes player piano. Large bridge and good deck space. Fine condition. Henry J. Gielow, 23 W. 43d Street, New York City.



No. 7597—For Sale—Reasonable—36 ft. bridge deck cruiser, 10 ft. beam; 30 inches draught. 30 horsepower 4 cycle high grade motor. All fine condition. Speed 10 miles. Stateroom and saloon sleep 4. Two toilets. Controls on bridge. Finished mahogany. Electric lights. Completely equipped. Located near Baltimore, Md. Henry J. Gielow, 23 W. 43d Street, New York City.

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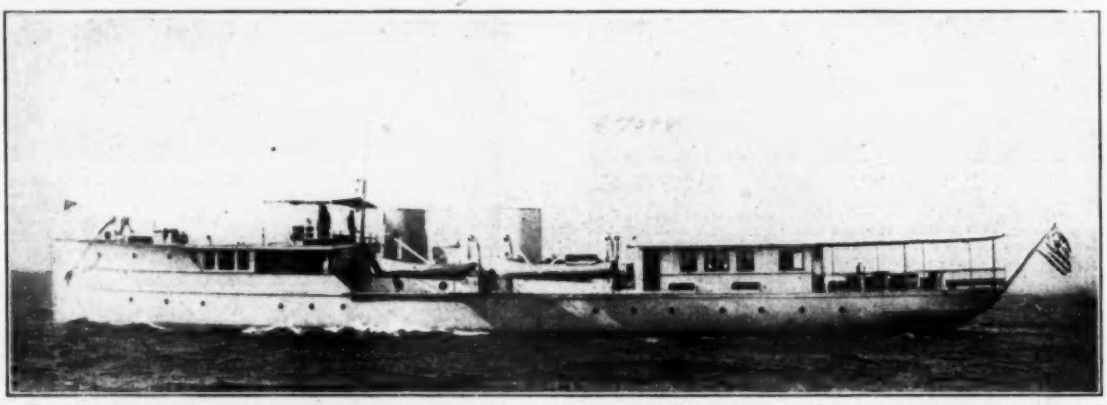
NAVAL ARCHITECTS AND YACHT BROKERS

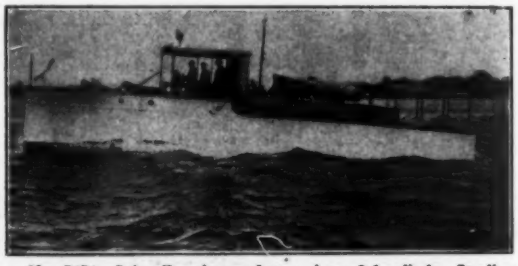
Telephone 4510 John

52 Pine Street New York City

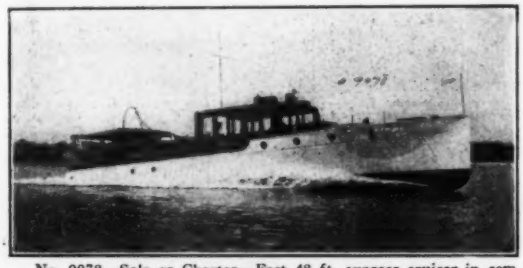
Offer for sale the following yachts, some of which are available for charter



No. 7098—Unusual opportunity to purchase the largest cruising steel motor yacht afloat—140 ft. overall—19 ft. 6 in. beam—6 ft. 6 in. draft. Designed by Tams, Lemoine & Crane and built by Lawley. An exceptionally able yacht. Triple screw having three 6 cylinder Speedway motors. Gasoline consumption low. Speed 16 miles per hour. Large cruising radius. Has very commodious owners' quarters attractively fitted and furnished. In absolutely A-1 shape throughout.

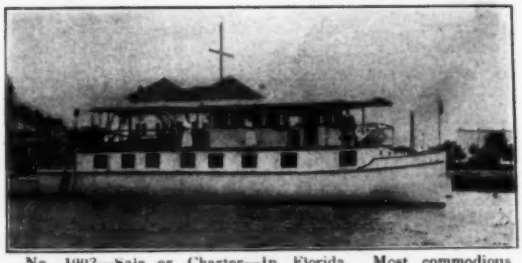


No. 7474—Sale—Brand new fast cruiser; 2-6 cylinder Sterling motors; speed 21½ miles; all modern conveniences.

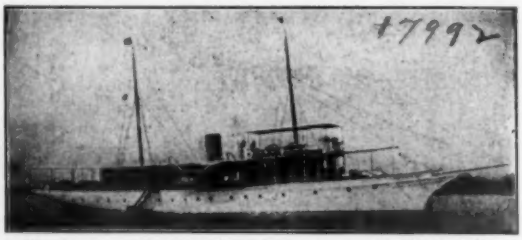


No. 9078—Sale or Charter—Fast 48 ft. express cruiser in commission. Immediate delivery—2 new 6 cylinder Van Blerck motors. Good accommodations. Thoroughly overhauled this year in all departments.

No. 8102—Sale—Charter; most desirable raised deck cruiser available; practically new, 81 ft. x 13 ft. x 5 ft. draft. Speed 15 miles, electric light, hot water, heat and refrigerating plant.



No. 1902—Sale or Charter—In Florida. Most commodious houseboat of her length available; 64 ft. x 17 ft. 6 in. x 3 ft. 2 in. draft.



No. 7992—For Sale—Modern steel motor yacht. 115 ft. 7 in. x 17 ft. x 5 ft. 3 in. draft. 2—100 H.P. Standard motors. Speed 15 miles. Commodious owners' quarters.

No. 1927—Sale—Charter—Very desirable, twin screw houseboat; 5 staterooms, 3 bathrooms, dining saloon, lighted by electricity and hot water heat.

Advertising Index will be found on page 142

EDWARD P. FARLEY CO.,

6 N. Michigan Avenue, Chicago, Ill.
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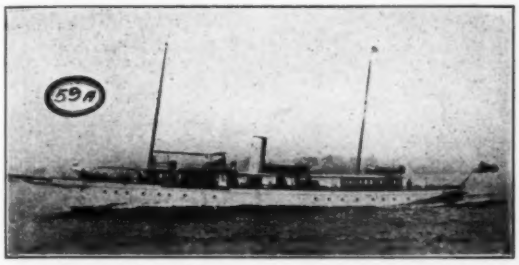
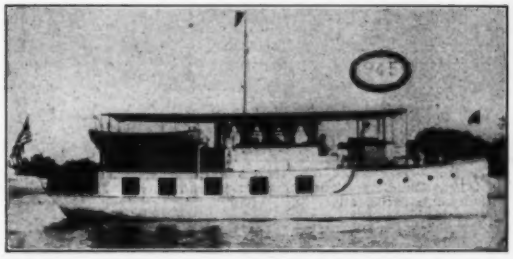
Naval Architects, Yacht Brokers, Surveying, Marine Insurance

We have a complete list of all Steam and Power Yachts, Auxiliaries and Houseboats which are offered for sale and charter.

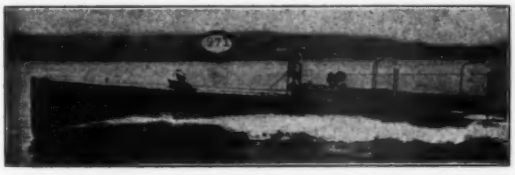
Plans, Photographs and full particulars furnished on request.



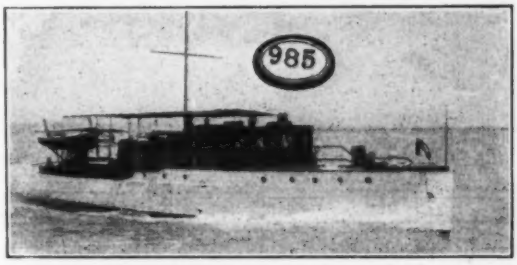
No. 59a—For Sale—170 ft. steel steam yacht. Six double staterooms, large dining saloon and social hall on deck. Triple expansion engine. Speed up to sixteen miles. Excellent condition throughout.



No. 945—For Sale—Mathis 52 ft. houseboat. Launched in December, 1919. Is practically a new boat. Furnishings, etc., are of the best.

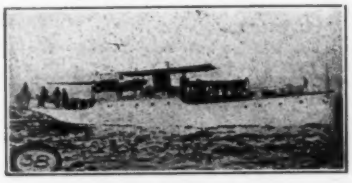


No. 971—For Sale—35 ft. Speedway runabout in excellent condition. 150 H.P. Speedway motor, electric starter. Speed 27 miles. Mahogany planking and finish. Batten seam construction. Fully equipped with top, windshield, etc., and all extras as furnished by builders. A rare bargain.

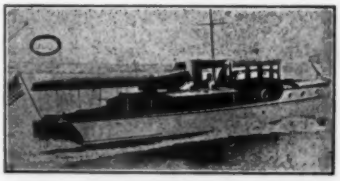


No. 985—For Sale—73 ft. x 13 ft. 6 in. x 2 ft. 6 in. twin-screw cruiser. Built 1919 by Seabury. Two Speedway motors. Speed up to 20 miles. Two single and one double stateroom. Two toilets with showers. Dining saloon in deckhouse. A beautiful boat, mahogany finish throughout and good as new.

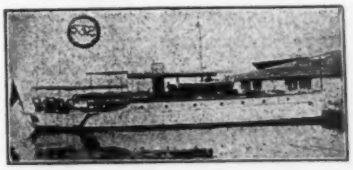
No. 158—For Sale—50 ft. x 10 ft. 6 in. x 3 ft. bridge deck Mathews cruiser. Built 1913. Cruising speed 10 miles. Very attractively arranged and in excellent condition. Moderately priced.



No. 74—For Sale—78 ft. Lawley built cruiser. Winton motor. Two commodious double staterooms. Two toilets. Roomy deckhouse serving as dining saloon. A very able and modern boat. In commission.

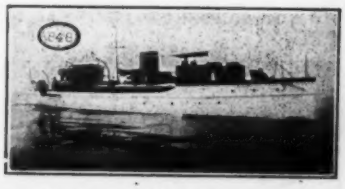


No. 880—For Sale—56 ft. x 11 ft. 6 in. x 3 ft. twin-screw express cruiser. Completed 1917. Van Blerck motors. Guaranteed speed 25 miles. Attractively arranged and furnished. Was not in government service.



No. 532—For Sale—71 ft. twin screw flush deck motor yacht. Built by Seabury. Able seaboat. Excellent condition throughout. E. P. Farley Co., Railway Exchange Bldg., Chicago, Ill.

No. 548 — For Sale — Attractive bridge deck power cruiser. 65 ft. x 13 ft. x 4 ft. 8 in. draft. Thoroughly modern and splendid seaboat. Bargain for immediate sale.



No 848—For Sale—Modern twin screw cruiser, 84 ft x 13 ft. 6 in. x 4 ft. 8 in. Sterling motors. Speed 13 miles. Two double staterooms, bath, dining saloon forward, with Pullman berths. Excellent condition. Fully equipped.

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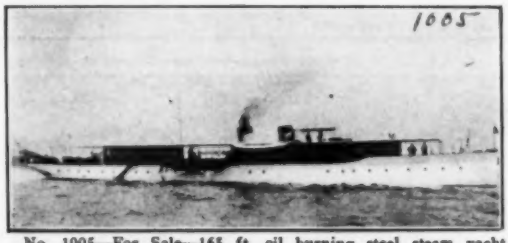
YACHT AND SHIP BROKER

501 FIFTH AVENUE at 42nd Street N. Y.

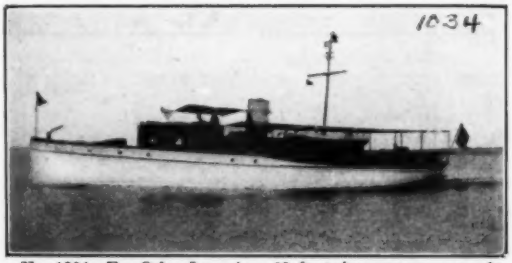
Yacht Appraiser

Marine Insurance

A few of our offerings are herewith submitted for your consideration. We shall be pleased to hear from clients interested in buying, selling or chartering.



No. 1005—For Sale—165 ft. oil burning steel steam yacht, speed 19 miles. Excellent construction and finish. Music room, 6 staterooms, baths, etc.



No. 1034—For Sale—Luxurious 80 ft. twin-screw power yacht. Speed 14 miles. 3 staterooms, bath, etc. Exceptionally attractive and has had the best of care.

No. 1015—For Sale—43 ft. cruiser, recently built, speed 14 miles. 1 double stateroom and saloon. Has had the best of care. Must be seen to be appreciated.

No. 1032—For Sale—43 ft. express cruiser, speed 25 miles. Excellent construction, snappy appearance and unusually seaworthy. Others up to 90 ft. in length.

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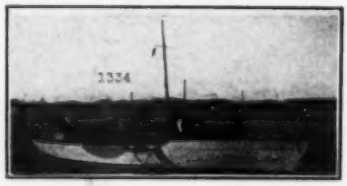
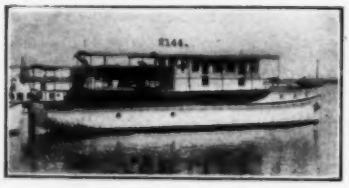
Our 25 Years' Experience and Our Knowledge of the Yachts We Offer, Insure Satisfaction to Clients

SEND SIX CENTS FOR OUR ILLUSTRATED CATALOGUE

No. 4322—Sale or Charter—Twin-screw 85 foot power houseboat. Five staterooms, dining saloon, three baths, etc. Speed 10 miles.



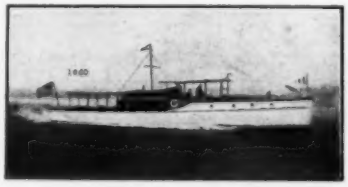
No. 1334—60 foot cruiser. Double stateroom. Two transom berths in forward cabin and two in after cabin. Sleeps 6 to 8 people. Two berths for crew. New 35-85 H.P. Sterling motor installed this year. Self starter. Speed 12 miles. Electric lights, etc.



No. 2144—60-ft. yacht. Draft 2 ft. 8 in. Two double staterooms, main saloon, large deck saloon, bath, etc. 60 H.P. Sterling motor. Speed, 10-12 miles.

No. 2131—Brand new V-bottom express cruiser, (similar to cut).. 45 x 10.6 x 3. Double stateroom, main cabin with two upper and two lower berths. Two toilet rooms, 6 cylinder 13-145 H.P. Sterling motor. Speed 20 miles.

No. 1592—45 foot cruiser. Double stateroom and main cabin, sleeps six people. Toilet room. Berth and toilet in engine room. 30-45 H.P. Fay & Bowen motor installed this year. Speed 10-11 miles.



No. 1860—62 foot twin-screw express cruiser. Exceptionally fine boat. Speed 23 miles. Also have similar boat with a speed of 26 miles at an attractive price.

Advertising Index will be found on page 142

WILLIAM GARDNER
F. M. HOYT

PHILIP LEVENTHAL
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WILLIAM GARDNER & CO.

Naval Architects, Marine Engineers and Yacht Brokers

1 Broadway, New York

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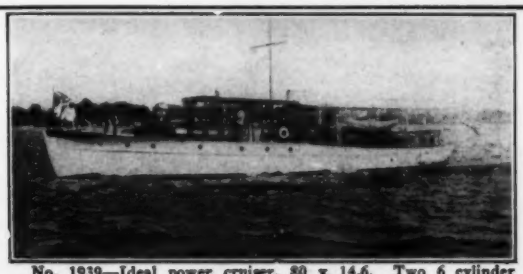
8638 Bowling Green

Cable Address
Yachting, N. Y.

We have a complete list of Yachts of every description for sale and charter

Plans, Photos and full particulars furnished on request

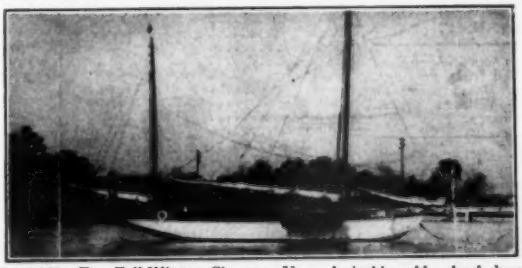
No. 1338—Power yacht, flush deck, 135 x 15.8 x 7.6. Lawley built, two 250 H.P. Speedway motors, splendid accommodation.



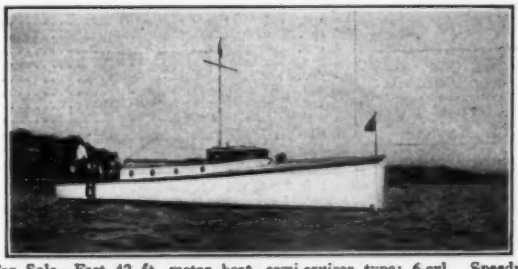
No. 1939—Ideal power cruiser, 80 x 14.6. Two 6 cylinder Sterling motors. Speed 14 miles. Everything in A-1 condition.

No. 2133—Express cruiser, 92 x 11.6 x 3.6, two 8 cylinder Sterling motors. Speed 25/30 miles.

No. 1937—Charter—Sale—Attractive twin-screw power yacht, 110 x 18, Diesel engines. Speed about 13 knots. Excellent accommodation and exceptionally economical to operate.

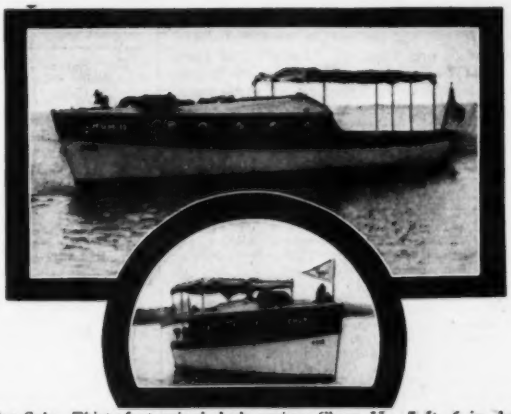


No. 8453—For Fall-Winter Charter—Very desirable, able shoal draught 55 ft. auxiliary yawl, 15 ft. beam and 3 ft. draught now in commission, delivered New York, after September 15th. Excellent handling under sail and has speed 7 miles under motor. Ralaco 4 cyl. 4 cyc. 20 H.P. engine just been overhauled and all in first-class condition. Sails and inventory complete and in excellent condition. Has large self bailing cockpit. Main saloon 13 ft. Stateroom with bed for two. Accommodates in all 6 comfortably beside crew of 2. Electric lighted, over 6 ft. headroom. Best of type available. Has cruised to Florida and return by inside route. Two rowing tenders carried in davits. HENRY J. GIELOW, 23 W. 43d St., New York City.



For Sale—Fast 42 ft. motor boat, semi-cruiser type; 6-cyl. Speedway engine; special clutch, steer inside or outside; varnished decks and cock pit; brass and mahogany trimmed; 2 bunks, now being painted; in commission at once if desired; will take $3,000.00; cannot be duplicated for $7,500.00. Machinery just overhauled at an expense of $1,250. O. H. Sherbrook, Blandford St., Boston, Mass.

For Sale—One 8 cyl. 4 cycle air cooled V type Hall-Scott aeroplane motor of 4½ x 6 bore and stroke, weighing approximately 500 lbs. Rating over 100 H.P. Price without carburetor or ignition apparatus, $225. The Badger Motor Company.



For Sale—Thirty-foot raised deck cruiser Chum II. 7 ft. 6 in. beam, 3 ft. 0 in. draft. Speed 8 miles. 20 H.P. 4 cyl. 4 cycle Kermath. Overhauled this spring. Comfortable and seaworthy. Ideal cruiser for two men. Sleeps four. Toilet, ice box, electric lights; fully found. Now in commission. Delivered anywhere along Potomac River. $1,200 for a quick sale. Want larger boat. O. E. Camp, 305 Southern Building, Washington, D.C.

For Sale—A beautifully quarter sawed oak fully equipped 63 ft. glass cabin cruiser, motor 45-65 H.P. 6 cylinder Sterling motor with electric starter. Galley fully equipped, Khotal 3 hole kerosene stove, Leonard cleanable refrigerator, sink, dishes, etc. Sleeping accommodations for 6 to 8 people, rubber mattresses, rattan folding bed in owner's stateroom. Barometer, ships clock, dingy, anchors, rope, chain, etc. Boat is at anchor ready to sail and must be sold. First check for $2,500 takes it. Owner just spent $6,000 in refinishing and equipping it. Jesiek Boat Co., Grand Rapids, Mich.

For Sale—Raised deck cruiser, 65 x 14 x 4. Four years old. Standard 6 x 8, six-cylinder engine, rebuilt this summer. In commission and guaranteed to be in strictly A-1 condition. Fully and expensively equipped. Hot water heated; separate electric lighting system and every convenience. Was not in Government service. 14 ft. power tender and 12 ft. skiff. Cruising speed ten miles with 500 miles cruising radius. Nothing better afloat in her class for comfort, sea-worthiness and looks. Worth $35,000, but will sacrifice for cash. Inspectable Baltimore or Norfolk, Va. If you want such a boat and mean business, address NYL, 905 Mutual Building, Richmond, Va.

Day Cruiser For Sale—47 x 10, 32-38 Standard motor. Overhauled last fall. In commission. Frank L. Bailey, 32 Highland Ave., Atlantic Highlands, N. J.

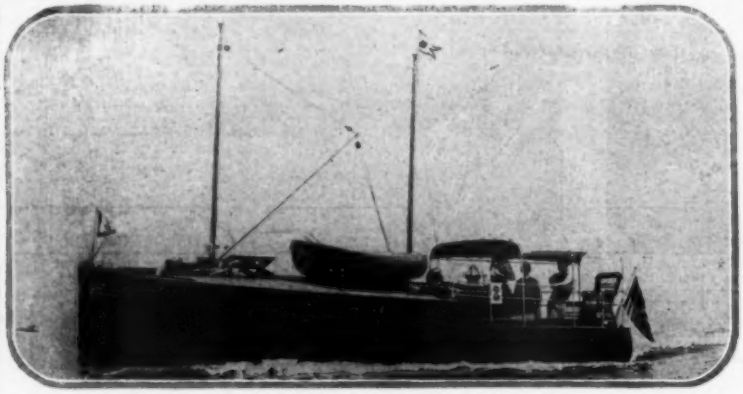
2 mast schooner, 125 ton sound and seaworthy. Ready to go. Price, $3,500.00. A. E. Reimer, 440 52nd Street, Brooklyn, N. Y.

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 6 cents per word, minimum $1.50. If an illustration is used, the charge is as follows, which includes the making of the cut:
Cut one inch deep, one column wide..... $ 5
Cut 1½ inches deep, 1½ columns wide..... $10
Cut 2¼ inches deep, three columns wide..... $20
Terms: Cash with order.

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.



"Turtle" For Sale—36 x 9 round bilge cruiser. Built by Luders. Four cylinder, Van Blerck 5½ x 6. Speed 11 miles. Fully equipped; galley; shipmate range; running ice water; cabin, 11 ft. 6 in. long; engine room, full head room throughout entire boat, and mechanical equipment in beautiful condition. Now in commission at New York Athletic Club, Travers Island. Price $5,000.00. Thomas Farmer, Jr., 354 Amsterdam Avenue, New York City. Phone Schuyler 2990.

For Sale—2 Model J. Van Blerck Motors, 215 H.P. each, entirely rebuilt and in A-1 condition. Bowler, Holmes & Hecker Co., 259 Greenwich St., New York City.

BARGAINS **BARGAINS**

EAGLE TWO CYCLE ENGINES

We purpose to close out at greatly reduced prices our entire stock of "Eagle" two cycle engines, as we intend to discontinue the manufacture of this type of engine in the future. Write at once for information to the

TORRINGTON COMPANY
STANDARD PLANT
Torrington, Conn.

For Sale—Forty-foot cruiser built for Florida Keys and Nassana cruising. Sterling Ailsa Craig powered. Run less than four hundred miles. If interested in a first class cruiser will send description on request. Owner P. O. Box 211, Rockville Center, New York.

For Sale—Dory launch. Seaworthy, fast. Located at Alexandria Bay, New York, on Lake Champlain. 22 ft. length, 6 ft. beam, 1 ft. draft. Buffalo engine. 7 H.P. Cockpit 12½ x 5. Two side seats, one cross seat. Full length hood. Hull engine fillings first class condition. P. O. Box 214, Carlisle, Pa.

For Sale—4 cylinder 5 in. x 5 in. 20 H.P. Roman engine in good running order. Price $150. A. Steinbauer, 609 So. 5th St., Niles, Mich.

For Sale—1 110-Volt 15-Amp direct current Carlisle & Finch generating set. Fine condition. F. O. B. Washington, D. C., $200.00. Also one 7-in. arc search lamp, $50.00, and 1 9-in. Richardson arc search lamp with brass deck stand, 70 Volts 8 Amp., net $135.00. Percy M. Child, 1110-14th St. N.W., Washington, D. C.

For Sale—1 pair Bausch & Lomb binoculars, 6 power, same as new. Percy M. Child, 1110 14th St. N.W., Washington, D. C.

For Sale—62 by 12 by 4 motor yacht. Standard motor. Speed 10 miles. $7,000.00. Percy M. Child, 1110 14th St. N.W., Washington, D. C.

Trimount Whistle Blower Outfits
Blower runs by friction contact with engine fly-wheel. Whistle of brass, nickel-plated.
Made in 3 sizes.

Trimount Rotary Hand Bilge Pumps
All bronze composition. Suction lift 6 to 20 feet. A lifelong convenience.
Made in 3 sizes.

TRIMOUNT ROTARY POWER CO.
30 Heath Street Boston, Mass.
(Factory: 292 Whiting Ave., East Dedham, Mass.)

For Sale: Two suits of sails nine pieces, Mast, Spars, Halyards, Stays, Anchors, Bushings, Awning, etc. From 50-ft. sloop destroyed by fire, must be sold at once. George Crossman, 2654 So. 62nd St., Phila., Pa.

Wanted: Good medium or speed type 4 cycle 30 H. P. or over, Red Wing, Wisconsin or similar for light runabout. Give cash price. C. L. Carpenter, 835 Cliff St., Ithaca, N. Y.

For Sale: 25 H. P. Ferro marine engine; now being thoroughly overhauled, new bearings, rings. Gray Davis generator, Bosch magneto, $200. W. E. Dusenbury, 37 William Street, Newark, N. J., phone 3030 Mulberry.

Auto Motor Supplies—Buick—Michigan—Stoddard Dayton—Cadillac—Overland—E.M.F. Continental and Buda Motors, all types $50 each and up. Special high tension 2 and 4 cylinder Magnetos $9.50 each. Electric and Gas Head Lamps—Coils—Carburetors — Air Compressors—Generators—Starters, etc. Write for late catalogue. Address Motor Sales Dep't. B, West End, Pittsburgh, Pa.

For Sale: A 40 ft. raised deck cruiser complete to the minutest detail with every possible convenience. Double stateroom and saloon sleeping five or six. Price $3,000. Cannot be duplicated for double. For complete description address Yachting, c/o Motor Boating.

CANADIANS, Second-hand engine bargains. Send for list.

GUARANTEE MOTOR COMPANY
73 Bay Street, North Hamilton, Ont., Canada

Canada's exclusive wholesale and retail marine engine jobbers. Dominion's Largest Distributors. Free illustrated catalog, showing prices of twenty-six manufacturers. Canadian Boat and Engine Exchange, Ltd., Toronto, Canada.

For Sale—36 ft. Elco express boat, mahogany finish. Complete with automobile top, glass wind shield, starter, wicker chairs. Located on the Great Lakes. Box 39, care of MoToR BoatinG.

For Sale—28 x 6½ raised deck cruiser, 4 cyl. 4 cycle motor. Speed 15 miles. New. Excellent condition. $650.00. Stearns, 164 E. Main St., Bridgeport, Conn.

HAMILTON MARINE ENGINE EXCH., INC.
440-444 Fifty-Second Street, Brooklyn, N. Y.
A large stock for Immediate Delivery to power your Motor ship—and tender. Write us—wire us to hold the motor you select. All Engines can be seen running and Your Inspection invited.

REBUILT ENGINES AT RIGHT PRICE.

All four cycle with reverse gear—

	H.P.	In.	Cyl.	Price
Standard	300	10x10½	6	$4,000
Standard	75	8x10	4	2,200
Standard	37	6x 8	4	1,160
Craig	300	11x14	6	2,500
(Pair, $4,800)				
Craig	120	6½x 7	6	1,500
Craig	18-21	5x 6½	3	400
Speedway	60-75	6x 6	6	1,000
Globe	100-150	10x14	4	2,400
Globe	24	7x 9	2	450
Automatic	25	7½x 9	2	500
Eagle	24	6x 8	3	400
Automatic	37½	7½x 9	3	900
Fairbanks	20	6x 6½	2	450
Buffalo	16-20	4¼x 5	4	300
Buffalo	24	5x 6	4	450
Buffalo	12	3½x 5	4	275
Rockaway	40	6x 6¼	4	460
New York	40	5½x 6	4	500
20th Century	12	5¼x 6	2	300
Hall	12	5x 6	2	300
Palmer	12	5x 6	2	310
Talbot	15	4x 5	3	260
Doman	12	4x 4½	4	450
Wolverine	16	6½x 7	2	800
Jager	40	5¼x 5½	6	600

2 cycle standard reversible type engines—

2 cyl. Lathrop	24	H.P.	$375
2 cyl. Lathrop	20	H.P.	350
2 cyl. Lathrop	14	H.P.	275
2 cyl. Lathrop	16	H.P.	275
1 cyl. Lathrop	12	H.P.	160
1 cyl. Lathrop	8	H.P.	125
1 cyl. Lathrop	6	H.P.	115
2 cyl. Palmer	12	H.P.	225
2 cyl. Palmer	5	H.P.	100
1 cyl. Palmer	7½	H.P.	100
1 cyl. Palmer	6	H.P.	96
1 cyl. Palmer	4	H.P.	76
2 cyl. Mianus	20	H.P.	360
2 cyl. Mianus	15	H.P.	260
2 cyl. Mianus	10	H.P.	200
1 cyl. Mianus	7½	H.P.	100
1 cyl. Mianus	5	H.P.	76
1 cyl. Mianus	2	H.P.	60
2 cyl. Bridgeport	15	H.P. new	400
2 cyl. Bridgeport	10	H.P.	200
3 cyl. Bridgeport	18	H.P.	300
3 cyl. Ferro	25	H.P.	260
3 cyl. Ferro	17½	H.P.	200
3 cyl. Fairbanks	18	H.P.	225
3 cyl. Fairbanks	21	H.P.	250
2 cyl. Barker	8	H.P.	120
2 cyl. Victor	15	H.P.	200
2 cyl. Auto Marine	8	H.P.	100

Use "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

One cyl. Two cycle
4 H.P. Detroit ..... $45.
6 H.P. Gray ..... 60.
7½ H.P. Ferro ..... 70.
9 H.P. Fox ..... 75.

Two cyl. Two cycle
4 H.P. Tuttle ..... $55.
6 H.P. Ferro and gear. 75.
6 H.P. Roberts and gear 95.
6 H.P. Gray and gear.. 85.

Two cyl. Two cycle
6 H.P. Lockwood-Ash .. $70.
6 H.P. Motorgo ..... 65.
8 H.P. Fox ..... 85.
9 H.P. Ferro and gear.. 115.
10 H.P. Erd ..... 80.
12 H.P. F. M. with prop. 125.
12 H.P. Gray and gear.. 165.
18 H.P. Ferro 3 cyl..... 135.
24 H.P. F. M. 4 cyl. and gear ..... $275.

Four cycle
5 H.P. Campbell one cyl. 85.
6 H.P. Uncle Sam 2 cyl. 75.
6 H.P. Imperial one cyl. new ..... 155.
6 H.P. Dunn 3 cyl..... 95.
12 H.P. Dunn 3 cyl..... 115.
40 H.P. 6 x 8—4 cyl.... 465.

And many others, also large line of auto, tractor and stationary engines, and supplies at very low prices. We take engines in trade and buy them. What have you?
THE BADGER MOTOR COMPANY, Milwaukee, Wis.

Advertising Index will be found on page 142

ALASKA STEAMSHIP COMPANY
Douglas, Alaska,
June 4, 1920
BRUNS, KIMBALL & CO.,
New York City, New York.
Dear Sirs:
I am in receipt of your letter of May 19th with enclosed check. And am well pleased with your fairness. And will recommend your firm at every opportunity I have.
The engine is giving good satisfaction —am well pleased with it.
Yours very truly,

REBUILT MOTORS

We supply rebuilt marine motors in all types and sizes with self starters attached to many of them. All worn parts have been replaced with new, and the Bruns-Kimball guarantee goes with every engine. Our catalog of new and rebuilt marine motors will be sent anywhere in the world on request. Let us know the exact dimensions and type of your boat and we will be pleased to suggest a satisfactory power plant.

Nous livrons des moteurs marins reconstruits de tous genres et forces, beaucoup munis de mises en marches automatiques. Toutes les pièce usées ont été remplacées par des pièces neuves, et la garantie Bruns-Kimball accompagne chaque moteur. Notre catalogue de moteurs neufs et reconstruits sera envoyé n'importe où sur demande. Faites nous savoir les dimensions exactes et le type de votre bateau et nous serons heureux de vous conseiller concernant le meilleur moteur à y installer.

Ofrecemos motores marinos reconstruidos de todos tipos y tamaños, muchos de ellos con arranque automático. Todas las partes gastadas han sido repuestas por piezas nuevas, y cada máquina lleva la garantia de Bruns-Kimball. Nuestro catálogo de motores marinos nuevos y reconstruidos se envia a quien lo pida. Digamos cuáles son exactamente las dimensiones y el tipo de su bote, y nos será grato recomendarle un motor adecuado para el mismo.

BRUNS KIMBALL & CO., INC.

153-155-157-159 West 15th Street, New York City

Branch Show Room: Bourse Building, Philadelphia, Pa.

NAVAL ARCHITECTS & YACHT BROKERS

Thomas D. Bowes, M. E.
NAVAL ARCHITECT AND ENGINEER
Offices:
Lafayette Bldg., Chestnut and Fifth Sts.
PHILADELPHIA, PA.

COX & STEVENS
Engineers and Naval Architects
Yacht Brokers
15 WILLIAM STREET, NEW YORK CITY
TELEPHONE 1375 BROAD

FREDERICK K. LORD
NAVAL ARCHITECT
120 BROADWAY NEW YORK

CHARLES D. MOWER
Designer of
SENSIBLE CRUISERS
POWER—SAIL—AUXILIARY
Twenty-five years' practical experience
347 Madison Avenue New York City

MONTREAL
286 St. James St.
Telephone Main 3352

NEW YORK
2 Stone St.
Telephone
Bowling Green 6077

N. E. McCLELLAND & CO., Ltd.
NAVAL ARCHITECTS
YACHT BROKERS

STRONG & BEEKMAN
Yacht and Ship Brokers
29 Broadway New York
Yachts—all types, Sale or Charter; Commercial Vessels, Steamers, Sail and Auxiliaries; Plans, Specifications, New Construction.
Tel. Whitehall 537
Cable Address "Strobick-New York

Sixteen Years
Designing
Experience
Specialty
Seagoing Yachts
116-Ft. Yacht "CONSUELO"
J. MURRAY WATTS, N. A.
126 South Fourth St. Philadelphia
Phone: Lombard 2072

AVOID disaster by using a DIRIGO compass on that boat. All materials first class. No rubber gaskets to rot. A very high grade pivot and high-grade jewel. Navy degree circle on dial. Brass and mahogany binnacles. Also new course finder and bearings instrument. Send for descriptive catalog.
EUGENE M. SHERMAN
Box 5 Bellevue, Wash.

World's Record May Be Broken

(*Continued from page 23*)

proached the finish line neck and neck.

Miss Toronto II, the boat which showed speed of 68.7 miles per hour in the recent mile trials on the Mississippi, will be a dangerous factor in this year's race for the Gold Cup. It will also give the Gold Cup event a little international color, which it has not had for many years. Miss Toronto II is a 22-foot single-step hydroplane owned by F. G. Ericson of Toronto, and built by him at his works at Leeside. Her power plant is 450 h.p. Liberty.

The Thousand Islands Yacht Club have challenged for the Gold Cup and have named Mistiyc as their representative boat. She is a small craft, about twenty feet in length, also powered with one 450 h.p. Liberty. She is at the present time under construction at Buffalo and her builder hopes to have her completed in plenty of time for the Thousand Islands Races as well as those for the Gold Cup.

Arab VI, a boat very similar to Mistiyc also built at Buffalo, is entered by Ralph Sidway of Buffalo. At one time an entry was talked of from New Orleans but nothing definite has been heard recently.

Motor boatmen all over the country as well as the public at large are showing a great deal of interest and enthusiasm for the coming races at Detroit for the Fisher Trophy. It will be remembered that Carl G. Fisher of Indianapolis presented this trophy to the American Power-Boat Association at the Gold Cup Races in 1918, with the idea of stimulating interest in the design and construction of a sane and sensible type of runabout which would be suited for other uses besides racing purposes alone. Mr. Fisher's forethought has certainly borne fruit, for designers and builders over the country have changed their ideas to a great extent recently and have turned out plans for runabouts which will be eligible for this race which are a marked improvement over boats ever designed or built in the past.

In order to be eligible to race for the Fisher Trophy one's boat must be a displacement craft and be powered with one or more stock marine motors not exceeding 3000 cubic inches in total piston displacement. The boats also must show that they are capable of a speed of at least 35 miles an hour before they are eligible to start and are limited to a minimum waterline length of 32 feet. The motors in competing boats for this trophy must be fitted with an efficient self-starter, have at least three transverse bulkheads, have the motor compartment entirely closed in and have seating accommodations for at least four persons.

One of the particular features of the Fisher Trophy Race is that the boats are under the jurisdiction of the Race Committee from the time of the preparatory signal on the first day until the finish of the race on the third day. No repairs to hull, power plant or accessories are allowed except during racing time. Parts and material used for minor repairs must be taken from those carried on board dur-

(*Continued on page 58*)

SPRAY-HOODS
BOAT CUSHIONS
ATLANTIC-PACIFIC MFG. CO.
124 Atlantic Ave. Brooklyn, N. Y.

Advertising Index will be found on page 142

Jordan Bros. Lumber Co.
Manufacturers
White Cedar Boat Boards and Cedar Products
Norfolk, - - Virginia

ANDERSON ENGINES
ASK ANY USERS

Anderson Engine Co., 4032 N. Rockwell St., Chicago.
New York Office, N. W. Cor. Broome & Lafayette Sts.

AUTOMATIC EXTENSION REEL
For Electric Lamps
Pat. Jan. 30, 1917. Approved by the Underwriters. An ideal fixture for motorboats, yachts, boat houses, garages, machine shops, etc. Enables you to use light anywhere up to 35 ft. from fixture. Automatic lock holds at any distance. Automatically rewinds cord when finished. Write for prices.
THE CINCINNATI SPECIALTY MFG. CO., Inc.
1929 Powers Street Cincinnati, Ohio

CAPE COD 20-FT. DORY LAUNCH
The Safest little family boat built. Motor housed in.
Also
17' Sail Dory
16' Shallow Draft
17' Life Saving Dory
14' Outboard Motor
16' Row Boat
12' Row Boat
CAPE COD SHIPBUILDING CORPORATION
Builders of craft to 150' length, or 10' draft.
Winter Storage
367 Main St., Wareham, Mass.
New York Show Rooms, 412 Eighth Avenue, New York City

IMPROVED THERMEX SILENCER
Increases Revolutions, No Back Pressure!
Cannot clog, nor collect salt; water cannot flow back to cylinder. No heating, no odor. Used free or under water—adjustable discharge. Lightest, cheapest to install. Free booklet shows why. Send for it today.
CENTRAL MFG. CO.
185 Liverpool St. East Boston, Mass.

"Reliance" Steering Gears AND Deck Controls
30 Styles
The Proper Wheel for every type of boat

Write for Literature
W. S. HALL CO.
Rochester, N. Y.

THE THOMAS LAUGHLIN CO.
Portland, Maine, U. S. A.
Marine Hardware
Sold by all progressive marine dealers.
Catalog sent free to dealers on request.

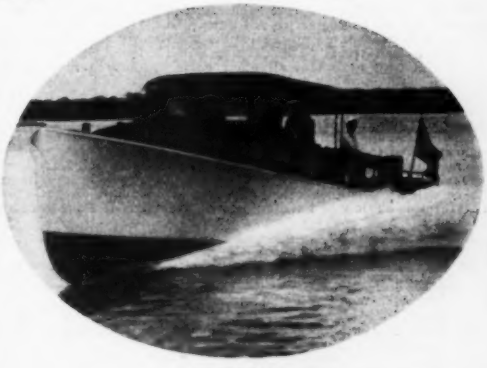
SHADOW V
Length 46 ft.
Beam 10 ft. 4 in.
Long Distance Express Cruiser Champion
1920—First Series
Owner, Mr. Carl G. Fisher, of Indianapolis and Miami

PURDY BOATS

PURDY built boats have gained a position in the very front rank of the express cruiser class. Not "how many" but "how good" is the standard by which the success of the PURDY production is judged.

THE PURDY Boat Company offers complete facilities for the designing and building of a limited number of superior quality express cruisers. We believe that by confining our efforts to a few boats of this class, we can give the owner the personal attention to every detail which is unavoidably lacking in a larger production.

MISS MIAMI, Mr. Fisher's entry for the Fisher Trophy Races to be held at Detroit, September 11th, 13th and 14th is PURDY built.



ALTONIA
Length 42 ft. Beam 9 ft.
Runner up—Long Distance Express Cruiser Championship
1920—Second Series
Owner, Mr. Arthur C. Newby, Indianapolis

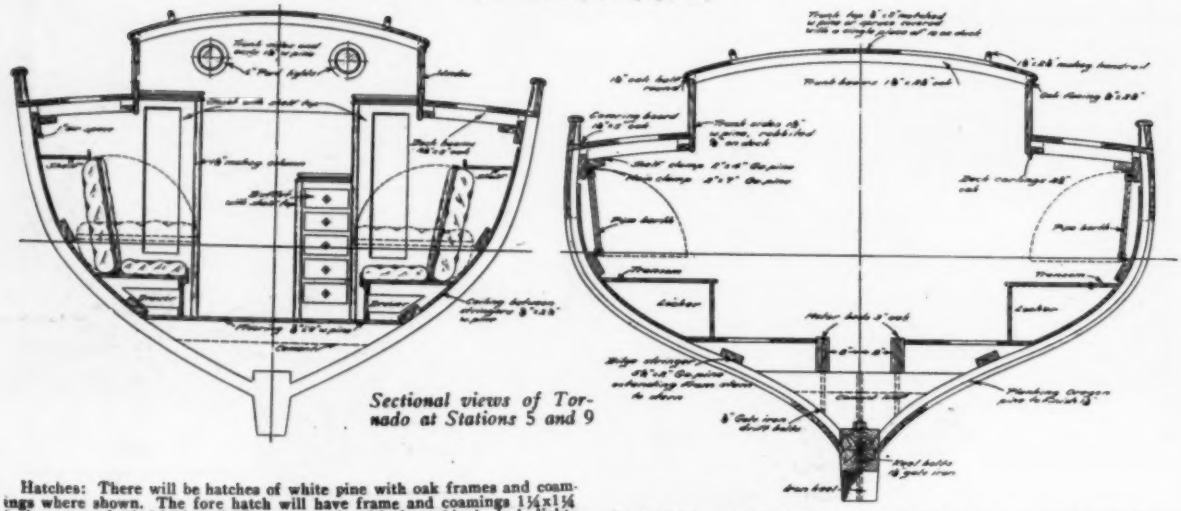
PURDY BOAT COMPANY

Designers and Builders of
EXPRESS CRUISERS

Trenton Michigan, U. S. A.

Tornado, a Hand 45-Foot Auxiliary Schooner

(*Continued from page 34*)



Sectional views of Tornado at Stations 5 and 9

Hatches: There will be hatches of white pine with oak frames and coamings where shown. The fore hatch will have frame and coamings 1¼x1¼ inches, top of ⅞x3-inch splined seam stock with four 6-inch deck lights set in as shown. There will be a hatch in cockpit to match deck, same to rest on a ⅜-inch oak coaming. To be bound by 1½x1/16-inch flat brass reinforced at corners.

Companionways: There will be two mahogany companionways with standard type of slide rails of 1¼-inch stock. Slide top of ⅞-inch stock with splined seams fitted in the usual manner. There will be neatly paneled vertical slide doors to lift up and out of place as required. Slide door to motor room in two parts, lower, 1 foot wide.

Cockpit: The staving will be of ⅞x2½-inch matched chamfered edge white pine gained into an oak coaming on cockpit floor with all joints as nearly watertight as possible. Staving will be sheathed outside above deck with ⅜-inch oak in single piece, neatly scarphed into aft end of aft trunk as shown. Sheathing and staving to be securely fastened together. The top will be finished by a neatly formed rabbeted white oak cap 1½x2½ inches. At aft end of pit there will be a ⅞-inch white pine box as indicated to properly house gear.

Hand Rails: On top of cabin trunk, both sides, there will be neat hand rails of mahogany with tops of rails above deck about 2¼ inches.

Metal Work

Iron Keel: There will be an iron keel in one casting to weigh about 3200 pounds and made in accordance with line plan. To be bolted securely to keel by 1¼-inch galvanized wrought iron bolts spaced as indicated and set up with nuts on washers on top of keel. Bolt heads to be set flush in bottom of keel.

Fastenings: All main backbone parts are to be securely fastened together with suitable galvanized wrought iron blunt bolts of usual type in sizes to correspond properly with parts fastened. All clamps and stringers, also all floor timbers, steps and other parts, in so far as is practical, will be fastened with suitable galvanized bolts and nuts. All planking will be fastened with 2¼-inch round head blunt point heavy galvanized boat nails, properly spaced as required. All butts will be made on oak blocks between frames and ends of adjoining planks will be riveted thereto with suitable galvanized iron rivets. The decking will be fastened with suitable galvanized iron boat nails and all other parts not herein mentioned are to be fastened with suitable galvanized iron, secure and complete. The bolts from horn timber and through shaft log alongside of shaft, will be of suitable yellow metal, as will be all other frame fastenings near propeller, shaft and rudder stock.

Chain Plates: Chain plates will be of galvanized wrought iron ½x2x24 inches, bolted to sides where indicated.

Travellers: For main sheet, there will be a 2-foot traveller of ⅞-inch galvanized iron rod with ends carried through deck beam with nuts under. There will be ¼x6-inch diameter sheet brass plates on deck around ends. The foresail sheet will have an 18-inch traveller of same construction.

Windlass: There will be a No. 0 galvanized iron standard type Gypsy windlass properly fitted on forward bitts as indicated. Same to be complete with oak brake bars as required.

Steering Gear: There will be an Edson patent oscillating steerer, size No. 6, with 32 inch galvanized iron steering wheel properly fitted for service as required.

Rudder: The rudder stock will be of cast manganese bronze as indicated. To be 2¼ inches diameter where it goes through rudder port. The port will be of brass pipe to fit stock loosely, threaded into horn timber flush with bottom of same. To be fitted with a gland stuffing-box at top. The blade will be 2¼ inches at the stock, tapering to 1¾ inches at aft edge, bolted to stock with five ⅞-inch bronze bolts. There will be suitable bronze pintle castings at heel as indicated and there will be a 2x⅜x12-inch bronze strap to support stock below port as shown.

Deck Plates: There will be 2-inch diameter opening brass screw deck plates in cockpit deck connected to fuel tanks with brass pipe, also 2-inch filler plate in top of water tank. Tanks to have necessary air vents.

Port Lights: There will be two 6-inch diameter opening, polished brass port lights in forward and aft ends of forward cabin trunk. There will be two port lights of the same type in forward end of aft trunk and one port in the aft end. There will be four fixed lights of double thick glass in each side of forward trunk, size of opening 5½x18 inches. In the aft cabin trunk there will be three fixed lights of double thick glass in each side, size of opening, 5½x13 inches.

Spar Iron Work: There will be ½x2-inch galvanized bands on mast heels, as shown. Booms will be hung on galvanized goosenecks as noted on plan. At mast shoulders there will be 4 inches wide by ⅜ inch thick galvanized iron taper bands to support rigging eyes. On foremast, one to have eye on aft side, and one on mainmast to have eyes on both fore and aft sides as shown. Peak halliards blocks to be hung on suitable strong galvanized eye bolts as indicated. Jib halliards and forestaysail halliards to be hung on suitable strong galvanized iron eye bolts. Both booms will have suitable wrought iron boom travellers and bands on outboard ends for lifts. All spar ironwork to be complete and as required for service.

Chocks: There will be brass bow and stern chocks as required.

Hawse Pipes: The builder will properly fit a pair of 2½-inch brass hawse pipes in rail forward as required.

In General: The builder will supply and properly fit all other small items of hardware or metal work which may be necessary to properly complete the boat in a workmanlike manner.

Motor and Installation

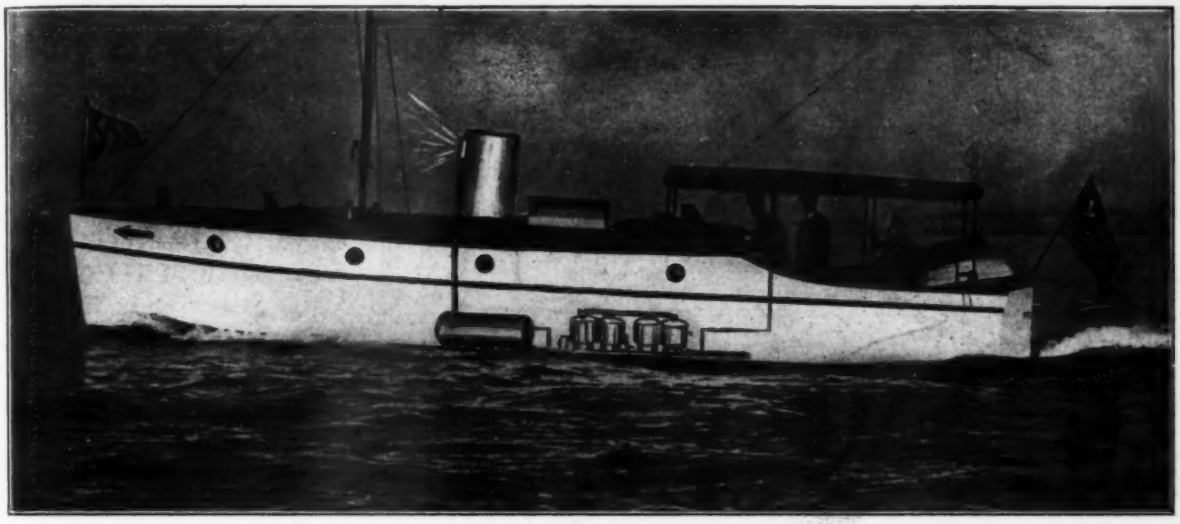
The motor will be a two-cylinder heavy oil engine of about 20 to 30 h.p., complete with propeller, shaft, and all of its equipment in

(*Continued on page 98*)

Stations	Half Breadths										Heights						Diagonals					
	Top of Keel	W.L.1	W.L.2	W.L.3	W.L.4	L.W.L.	W.L.6	W.L.7	W.L.8	Rabbet	Bottom of keel	Top of Keel	Sheer	Bul.1	Bul.2	Bul.3	Rabbet	Bottom of keel	A	B	C	D	E	F
1	1-10-1	1-7-4	1-3-5	0-10-0						0-3-0	0-0-5	0-9-6	4-10-7	4-1-4			7-6-4	7-2-7	1-10-4	1-6-7	1-2-0	0-8-4	0-4-3	
2	3-3-7	3-1-5	2-9-6	2-4-4	1-9-4	0-11-7				0-3-2	0-1-0	11-3-3	10-5-5	7-1-3	4-1-3		5-9-7	5-7-3	3-3-4	3-0-1	2-6-6	2-0-3	1-4-6	0-8-4
3	4-6-3	4-3-3	3-10-7	3-7-6	3-1-7	2-5-2	1-4-7			0-3-5	0-1-5	14-10-5	14-1-2	5-7-0	7-3-2		6-10-5	6-5-0	4-5-2	4-2-0	3-8-7	3-1-6	2-5-0	1-8-0
4	5-1-4	5-1-3	4-10-7	4-7-7	4-3-4	3-8-4	2-9-3	1-4-7		0-4-2	0-2-4	16-6-2	15-9-3	9-6-6	6-8-4	8-0-1	3-10-6	3-8-4	5-4-1	5-1-6	4-9-1	4-1-2	3-3-3	2-5-4
5	5-8-0		5-5-7	5-5-0	5-2-1	4-9-0	3-11-1	2-7-4	0-10-5	0-4-6	0-3-5	17-0-5	16-6-1	11-9-6	9-7-2	6-1-2	3-3-1	2-5-2	6-0-4	5-11-6	5-7-5	4-10-4	3-11-5	3-0-6
6	6-0-3		6-0-0	5-11-2	5-9-5	5-6-1	4-10-0	3-6-3	1-9-5	0-5-2	0-4-5	17-10-4	17-3-2	13-3-6	11-2-2	9-2-4	2-9-7	1-11-1	6-6-4	6-7-4	6-4-0	5-5-2	4-5-3	3-6-0
7	6-2-5			6-1-0	6-0-3	6-0-1	5-5-2	4-1-4	2-3-4	0-5-4	0-5-0	17-8-5	17-1-1	13-1-0	11-10-3	10-0-7	2-6-6		6-10-1	7-0-6	6-9-3	5-9-4	4-8-4	3-8-4
8	6-3-4			6-4-3	6-4-4	6-2-5	5-8-3	4-4-0	2-8-0	0-5-4	0-5-0	17-6-6	17-0-4	13-1-0	11-10-1	10-1-2	4-7-2	1-9-5		7-3-0	6-11-6	6-10-7	6-0-7	4-9-7	3-8-6
9	6-2-1			6-3-4	6-2-6	6-2-0	5-7-1	4-0-1	1-10-6	0-5-0	0-4-4	17-5-2	16-10-5	13-3-5	11-9-6	9-9-0				7-2-2	6-10-0	5-9-1	4-6-5	3-6-4
10	5-10-4			6-0-7	6-0-2	5-11-4	5-0-6	2-11-6	1-1-4	0-4-3	0-3-4	17-4-4	16-10-2	13-3-6	11-9-6	9-6-2	5-1-7			6-11-6	6-7-1	5-9-2	4-11-4	3-11-5	
11	5-7-4			5-8-4	5-7-6	5-5-5	5-0-5	1-9-5	0-6-4	0-3-7	0-2-5	17-4-6	16-10-6	14-7-0	12-2-1	9-7-3	1-10-5	0-9-0		6-5-2	6-0-2	4-10-2	3-9-2	2-9-2	
12	5-1-7			5-2-4	5-0-3	4-7-4	1-8-3			0-2-2	0-1-5	17-3-5	16-11-6	15-7-2	13-0-2	10-2-1	4-10-0	0-7-5		5-9-6	5-5-2	3-9-1	2-8-2	1-5-0	
13	4-6-5			4-6-4	3-10-5	0-8-0				0-0-6		17-2-2	16-11-7	16-0-3	13-7-6	10-9-4	6-5-4			4-11-6	4-5-0	2-6-6	1-2-5	
14	3-10-0			3-8-0								17-0-1	16-5-1	16-10-7	13-9-3					3-10-6	2-7-5	1-1-3		

Note—All dimensions are given in feet inches and eighths to the outside of planking. All heights are above base line. Base line 6" 6" below L.W.L. Stations spaced 3' waterlines spaced 12" Buttocks spaced 18" Diagonals spaced per plan of lines

Complete table of offsets for Tornado, the Hand Auxiliary Schooner



NAVIGATION LAWS DEMAND A WHISTLE

Why Use An Auto Horn?

The first real whistle outfit ever built expressly for your boat.

The whistle can be operated at anchor, as well as under way, by means of air storage.

The best that can be produced and complete in every detail.

Standard Equipment

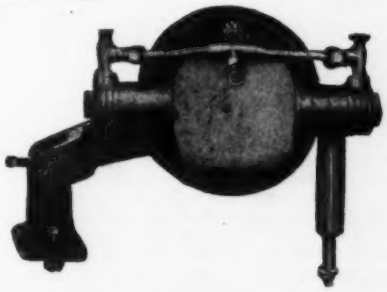
MODEL A

Compressor—1″ bore, 1½″ stroke, 2 cylinder opposed
Safety valve
Tank—8″ x 18″
Gauge and whistle
Tubing—12′

MODEL B

Compressor—Same as Model A

Tank—12″ x 24″
Gauge and whistle—larger
Tubing—20′



General Air Compressor, is friction driven, running in contact with the fly wheel of the engine, delivering an abundance of air to storage tank. Used in connection with General Navigation Whistle.

(1) The Lightning Cut
(2) The Wandering Oil Groove

GENERAL LIGHTNING CUT PISTON RINGS

will absolutely give you equa-radial pressure on your cylinder wall, obviate the loss of compression, and maintain the roundness of your cylinder.

The Wandering Oil Groove not only lubricates the cylinder wall, but effectively lubricates the ring itself, retaining the resiliency of the metal and avoiding friction.

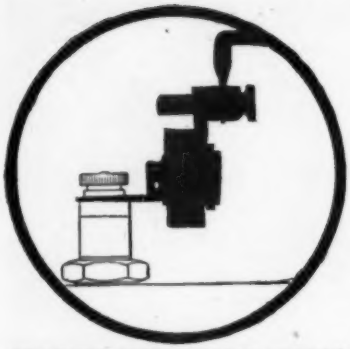
General Lightning Cut Rings are guaranteed to give the best possible results. Properly fitted and used, they will effect economy in many ways. (Write us for further information.)

GENERAL UTILITY CO., *Manufacturers*

1326-28-30 Ogden Street, Philadelphia

JOHN M. STOCKFISH CO.
111 West Washington St., Chicago
Western Sales Representatives

Export Department
17 Battery Place
New York City



SPARKO-GAP GIVES YOUR ENGINE THE "PEP" THAT YOU'VE ALWAYS WANTED

Half the fun of owning a boat is the risk that may come suddenly at any time. You are miles away from home in unfamiliar waters. A bank of nimbus clouds slides over the horizon and bang! a squall is on top of you.

Your engine stalls—your position becomes both dangerous and uncomfortable, tossing at the mercy of the storm.

So it all gets down to the power, endurance and condition of your engine. But your engine would never have stalled if equipped with Sparko-Gap, the little device which supplies the unfailing white hot spark.

Poor gas, expensive gas, is the rule today. It gets us both ways. Being poor gas it gives mighty little power, and being expensive it jumps the cost of nautical joy. Intall Sparko-Gap and get the "make and break" reliability.

The simplest thing you ever saw—just a small device—mechanically perfect—which you attach in a jiffy to the spark plug. It "steps up" the voltage of the ignition current so that it shoots across the spark plug points in *one intense spark* instead of a series of feeble fizzles.

Do you want to reduce the cost of the knots you make, jump the power of your engine, do away with nine-tenths of your carbon and increase your faith in your motor ten-fold?

Sit down at your desk, write a letter to Sparko-Gap, and we'll send you one Sparko-Gap for each cylinder of your engine at $1.50 each. You'll put them on in five minutes and they'll last as long as the engine turns over.

Proofs! We've got proofs galore. Sparko-Gaps served on French and American warplanes. By using a simple principle of the radio telegraph and telephone, Sparko-Gaps are eliminating the motor ills of a country.

Agents in every part of the country are increasing their orders two, four and six times in a month.

Such easy money deserves immediate action. Write today.

SPARKO-GAP COMPANY

Dept. M.B.
54 West 39th Street New York, N. Y.

Sparko-Gap Co., Dept. M.B.
54 W. 39th St., New York

Enclosed find $..... for a set of ..... Sparko-Gaps at $1.50 each.

Name .....

Street .....

City or State .....

Make of Motor .....
A set consists of one for each cylinder.

World's Record May Be Broken

(*Continued from page* 54)

ing the races and must be made by members of the crew during the race. After a boat crosses the finish line of any heat she must immediately report to the Race Committee and she will be under absolute control of the Race Committee until ten minutes before preparatory signal for the next race. During the time the boats are under the control of the Race Committee no changes, repairs, adjustments or work of any nature upon the power plant, hull or accessories should be permitted.

A large number of displacement runabouts have been built to compete with the Fisher deed of gift requirements with the intention of competing at Detroit. Boats powered with new type G. R. Sterling motors have been built by John W. Stroh of Detroit, H. B. Greening of Toronto, and Humphrey Berge of Buffalo. Carl Fisher has had built for him by the Purdy Boat Company of Sibley, Michigan, a husky 37-foot runabout which will be powered with one of his new twelve-cylinder Allison motors.

Hacker built, Hall-Scott powered runabouts are of course going to make a fine run for the Fisher Trophy. Edsel B. Ford's Comanche, powered with two Hall-Scott motors, which has already been described in MoToR BoatinG, has a very excellent chance to win. The Hacker Boat Company have built a similar hull which is also powered with two Hall-Scott motors for Jonathan Moore of Lake George. It is also expected that Capt. J. J. Phelps of New York will enter his new runabout powered with a three hundred H. P. Murray & Tregurtha motor.

The one-mile dashes for the American Power Boat Association One-Mile Championship of North America will also be held and should set up a record in excess of 70 miles an hour. All the boats entered in the Gold Cup Race are also entered for the one-mile trials which will be held on Wednesday, September 15th. In addition to the Gold Cup boats it is highly probable that the new hydroplane being built by Harold Wills of Detroit and powered with a new 18-cylinder motor which Mr. Wills has designed and built.

Another very interesting race will be for the trophy recently presented by the Scripps Motor Company, limited to cruisers powered with motors whose total piston displacement does not exceed 350 cubic inches.

Races for the Gar Wood Trophy, which is open to displacement boats powered with aviation motors without any restriction as to length or other particulars, is scheduled for September 11th, 12th and 13th. As usual the annual races for the Detroit News Cup and the Miller Chance Race will be held.

The Great Two-Cylinder
KOBAN
ROWBOAT MOTOR
The only vibrationless rowboat motor. Write for new catalogue.
KOBAN MFG. CO.
246 South Water St., Milwaukee, Wis.

Miller Marine Engines

GASOLINE OR KEROSENE
Sold for nearly twenty years solely on the basis of reliability and efficiency. We offer you a Miller motor to meet your requirements, be it for a small boat, a heavy sea-going cruiser or work boat. *TEN MODELS. Each one designed for a specific service. Write today for particulars*
MILLER ENGINE COMPANY
2329-2331 No. Tallman Ave. Chicago, Illinois

Advertising Index will be found on page 142

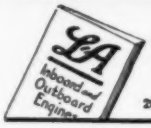
Universal Specialties

Lowest possible prices on all marine supplies.

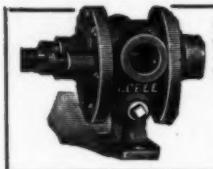
Class 1 Outfit $6.00

UNIVERSAL MOTOR BOAT SUPPLY CO.
Atlantic Highlands, N. J.

Get this L-A Engine Book



—it gives valuable information about motor boat engines. It also describes the full line of L-A inboard and outboard motors and tells of the 30 days' free trial plan.
Write for your copy today.
LOCKWOOD-ASH MOTOR CO.
2907 Jackson St. Jackson Mich. (22)



If you want good circulation on your Automobile, Launch or Motor Boat, use a
LOBEE PUMP
Lobee Pump & Machinery Co.
57 Bridge Street, Buffalo, N. Y.

Nautical Instruments

underlighted Compasses, Course Protectors, Bearing Finders. Every navigator should have them. Send for interesting catalogue. Address Box 45.
Marine Compass Company
Bryantville, Mass.

REBUILT ENGINES

Paragon Reverse Gears
At 30 Per Cent. Discount
C. B. HAMBLEN & CO.
100 Atlantic Ave. Boston, Mass.

Mullins Steel Boats Can't Sink

When you think of buying a boat, whether it be a 16-foot Runabout, a big 26-foot Auto Boat, or something in between—remember that Mullins Steel Boats are guaranteed for life. They cannot sink, leak, water-log, dry out or open at the seams—never require calking. Designed by America's foremost naval architects. More than 70,000 in use. Big catalog of steel or wooden motor boats, rowboats or canoes, on request.
The Mullins Body Corp., 691 Franklin St., Salem, O.

Pressure KHOTAL Oil Stoves

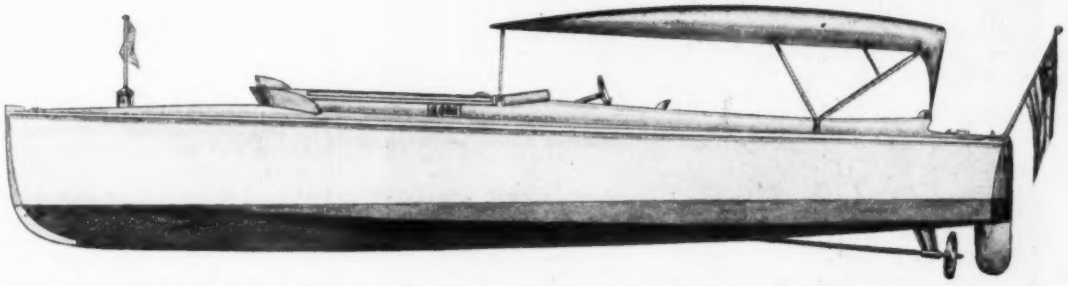
Made in one, two, three or more burners. Complete catalogue on application to manufacturers.
IWILLIAM H. OTTO METAL GOODS CORP.
401 St. Pauls Ave. Jersey City, N. J.

Sootless Spark Plugs

Unbreakable mica insulation and brass jacket that can't rust. Price $1.50—*the cheapest plug in the long run.*
Dealers or by mail.
OAKES & DOW CO.
308 Atlantic Avenue, Boston, Mass.

Albany BOATS

The New Albany 26-foot Runabout Seats Seven Passengers



A thoroughly reliable, speedy, buoyant and dry boat. To insure accuracy of line this runabout is built over a form, with a style of frame heretofore used only in our most expensive built-to-order boats. The following are a few of the distinctive features especially desirable which will return the owner a maximum of boating pleasure—

- Modified V-bottom
- Graceful lines
- Raised Hatches
- Superior Construction
- Electric generator and starter
- Electric lights
- Automobile drive
- Controls on port side
- One man top
- Polished plate glass windshield—disappearing type
- Luxurious cushions and lazy-backs
- Unit power plant
- 4-cylinder 4-cycle motor
- 20 m.p.h. speed
- Seats seven passengers.

Sister boats in the Albany fleet comprise 30- and 35-foot Mahogany Fast Runabouts; 40-, 42-, 50- and 57-foot Express Cruisers de Luxe. Detailed specifications and pictures of the boat that is of interest will be forwarded to responsible parties on request.

Albany Boat Corporation

Seventh Street

Watervliet, N. Y.

CUT RATE
MARINE SUPPLY HOUSE
Everything for Motor Boats

Catalogue mailed free

E. J. WILLIS CO. 85 Chambers St. New York City

Yard & Shop

(*Continued from page* 44)

Courses in Ship Drawing and Design

The Polytechnic Institute of Brooklyn offers a series of new evening courses in ship drawing and design, yacht designs, and marine engineering. These courses have been particularly prepared for the use of yachtsmen and others interested in ships and marine construction generally.

The courses will consist of lectures and exercises in calculations required in ship designing. The design of a small yacht hull is to be used as an example in the course, the principles being identical with those employed for larger vessels.

Complete information covering these courses can be obtained from the Institute at 99 Livingston Street, Brooklyn, N. Y.

Courses at Cooper Union

The popular course in ship drafting at Cooper Union, New York, will be continued this winter as previously. Students are now being enrolled for the term. The class meets three evenings per week, and is open to all qualified applicants.

Battery-less Flashlight

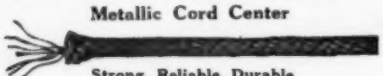
The only flashlight generating its own current is being introduced by the Art Metal Works of Newark, New Jersey. This lamp is absolutely waterproof, weighs one pound, and requires no batteries whatever.

(*Continued on page* 102)

Quayle Oil Engines
FOR MARINE SERVICE
COMMONWEALTH MOTORS CO.
326 W. Madison St. Dept. E-1 Chicago, Ill.

Hunting Boats, Canoes, Rowboats, Fishboats and Motor Boats. Catalog Free. Save Money. Order by Mail. Please state what you are interested in.
THOMPSON BROS. BOAT MFG. CO.
1907 Ellis Avenue Peshtigo, Wis.

Roebling Launch Steering Cable
Metallic Cord Center



Strong, Reliable, Durable
Send for Folder No. A-375
JOHN A. ROEBLING'S SONS CO., Trenton, N. J.

NO MOTOR BOAT COMPLETE WITHOUT
STEWART CUSTOMBILT NECESSITIES
SEE OUR AD IN NEXT MONTH'S ISSUE

4-Cycle Engines of Quality
Six sizes—light, medium, and medium heavy duty. 3 h.p. to 20 h.p.—1 to 2 cylinders. Gasoline or kerosene. Suitable for workboats, fish skiffs, sampans, pleasure boats, etc. Working parts on lightweight models, interchangeable with Ford engine parts.
Live agents wanted in all parts of the world
SEATTLE-STANDARD ENGINE MFG. CO.
Seattle, U. S. A.

P. H. Gill & Sons Forge and
Machine Works, Brooklyn, N. Y.

FINISHED CRANK SHAFTS
We are furnishing them to some of the leading marine engine builders. Carbon and Alloy Steel, Heat Treated to your own specifications. We grind all Pins and Bearings. Forged, machined, and finished complete in our own plant. Let us quote you.

Advertising Index will be found on page 142

How Hot Bearings Can Be Freed Instantly

On the short, one-day outing, on the long cruise, in the quick dash for the train, or at the crucial point in an important race; suddenly a hot bearing develops. It may burn itself free or it may tighten up and break a connecting rod, sending it crashing through the crankcase.

Anywhere, any time, this thing is liable to happen, but it is usually at the most important time. A hot bearing will mean no unpleasant consequences for you, however, if you have a can of TIMESAVER aboard. A pinch of it in the lubricating oil and instantly the hot bearing grinds itself free and becomes cool. The race or the outing trip continues without interruption from bearing trouble.

This is but one of the uses of TIMESAVER Compound, the wonderful bearing abrasive that has been pronounced the greatest advance in the mechanical field in a decade.

Some method of fitting a bearing that would be easier, quicker, more accurate and less expensive than the slow, inaccurate process of scraping, has long been sought by the mechanical world. Many different abrasives have been tried, but in every case it has been found impossible to thoroughly clean them out after the grinding was done. A portion would become imbedded in the soft metal and thus would continue cutting and scratch the shaft or ruin the bearing.

In overcoming this difficulty TIMESAVER Compound has taken rank as the only perfect bearing abrasive and brought about a revolution in mechanical practice. The principle upon which it works is very simple. It is composed of particles of different size, all under 50 mesh, and after a few minutes' grinding the smaller crystals break down the larger ones, the whole becoming a harmless residue because it is soluble in oil.

TIMESAVER Compound works best in a thin solution and where there is plenty of room; therefore it is ideal for relieving hot bearings. Placed in the oil cup while the motor is running, it almost instantly cuts away the high riding points of the bearing and then as quickly becomes inactive and harmless.

If you have used TIMESAVER Compound you know how unwilling you would be to start on a trip without it. If you have not yet tried it, you should become familiar at once with its wonderful properties. Mail the attached coupon with $1.50 and a trial can containing one ounce, sufficient for a number of bearings, will be sent you. It is guaranteed and if you are not entirely satisfied your money will be refunded.

M. T. K. SALES CORPORATION, *296 Andrews St.*, Rochester, N.Y.

International Distributors Timesaver Bearing Abrasive

M. T. K. Products Company, Seattle, Wash., *Manufacturers*

Timesaver Sales Agents

Timesaver Sales Corp., 370 West 51st St., New York City.

Timesaver Sales Co., 513 Chamber of Commerce Bldg., Chicago, Ill.

Timesaver Sales Co., 612 Fifth Ave. S., Minneapolis, Minn.

J. H. Weber & Son, 318 Central Bldg., Los Angeles, Cal.

Western Motor Supply Co., Shadbolt and Boyd Iron Co., Milwaukee, Wis.

Henderson & Nilen, Helena, Mont.

Modern Specialty Co., Fargo, N. Dak.

USE THIS COUPON

M. T. K. Sales Corporation,
296 Andrews St., Rochester, N. Y.

Enclosed $1.50 for ounce can of Timesaver Compound with directions. Money back if not satisfactory.

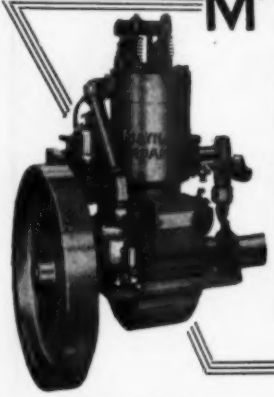
Name .....

Street .....

City .....

14X

MAYNARD-ADAMS
BERKELEY, CALIF.



A Real Engine for Real Boats

A 3½ H.P. four-cycle engine that is not a toy but a high grade and highly developed power plant for skiffs, dories, tenders, small workboats, etc. All parts subject to wear are replaceable with FORD parts. Immediate deliveries.

DEALERS: Add this big seller to your line. Write for terms.

MAYNARD-ADAMS ENGINE CO.
Eighth and Delaware Streets
Berkeley, California

OLOMEL

A Superior Oil and Water Stop Better and Cheaper than Red Lead

Used by Consolidated Shipbuilding Corp., on the

YACHT "LYNDONIA"

also on U. S. Destroyers, and by leading shipyards. Supplied in three forms—Olomel Solution, Olomel Compound and Olomel Putty. We also manufacture Bitumel, Electrimel, Bituminous Enamel, Oxide Iron Paint, Copper Paint, Non-Corrosive Paint, Acid Resisting Paint, Etc.

Write today for full information and prices.

OLOMEL MFG. CO., 18th & HAMPSHIRE STS. SAN FRANCISCO, CALIF.

Crockett's Spar Composition is the only varnish which will last a season on a deck

THE DAVID B. CROCKETT CO.
Bridgeport, Conn.
The Bissell Varnish Co., *Successor*

Frederic S. Nock
Naval Architect & Yacht Builder
Marine Railways, Storage & Repairs
East Greenwich R. I.

THREE B

UNIVERSAL JOINTS

A creation in Universal Joint construction

Lubricant is force fed to Over-size Bearings by centrifugal action.

Complete information on request.

BLOOD-BROS. MACHINE COMPANY
Pioneer Builders of Universal Joints
ALLEGAN MICHIGAN

DUPONT Marine Motors are built to meet the requirements of the most exacting owner. duPont Engineers have combined a reliability which is absolute with complete accessibility in these power units.

Immediate Delivery

DUPONT MOTORS, INC.
WILMINGTON DEL.

Southland 45-Foot Express Cruisers

A stock boat as fine as any built to order. Selected white oak frames, clear cypress planking. Inside finish white, with mahogany trim; outside finish in mahogany.

Length	45'-0"	Cruising radius 375 miles
Beam	10'-6"	Accommodates four and crew
Draft	3'-3"	Speed 22 knots and better

Power—One 8 cylinder Model FM Sterling

SOUTHLAND STEAMSHIP CO.
Shipbuilding Department — — Savannah, Georgia

Run Your Boat on Kerosene

Cheaper than gasoline and equally good when used with the

OLSEN KEROSENE VAPORIZER

Sold on 30-Day Money-Back Guarantee

Fits any 1" to 3" carburetor. Perfect combustion—no waste, smoke, or smell. Greater flexibility and mileage—less carbon. Fuel costs greatly reduced. Send for details.

U. S. VAPORIZER COMPANY
214 STATE STREET BOSTON, MASS.

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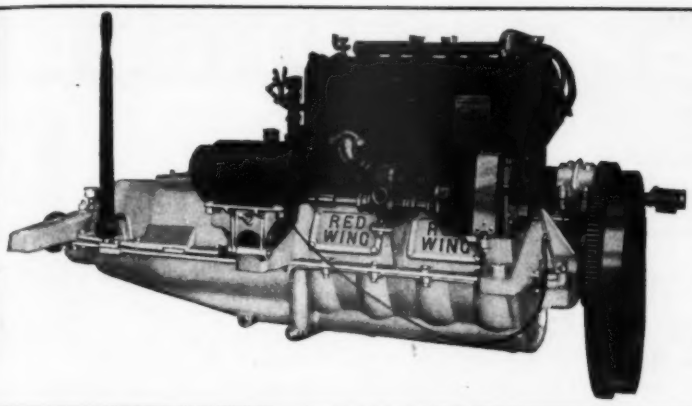


Red Wing Thorobred
THE MOTOR WITH POWER TO SPARE

PREVENTION AND CURE

Motor satisfaction, like good health, is a matter of anticipation and prevention.

There are certain fixed rules of living which produce robust health and a happy existence. There are certain definite engineering rules in the design and construction of a marine motor that are equally certain to produce a robust, sweet running motor. The THOROBRED is built to these rules. In it you get prevention of trouble; you don't spend the rest of your life with the "motor doctors."

It sure is a real motor. Competitors say so.

10 to 40 H.P. in five sizes. They burn either kerosene or gasoline.

RED WING MOTOR CO.

Dept. B. RED WING, MINN., U. S. A.

The pleasures of boating enhanced by the feeling of Security one enjoys if your Craft is protected by *GOOD WOOLSEY PAINT and VARNISH—TOP and BOTTOM.*

WOOLSEY COPPER PAINTS

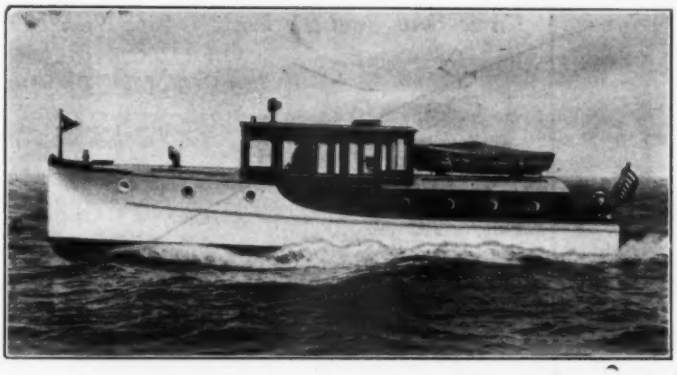
AND

MARINE PAINT SPECIALTIES ARE THE WORLD'S STANDARDS

Copper Paints—Brown, Red and Green, Yacht White, Deck Paint, Marine Mixed Paints, Metal Bottom Paint, Seam Paint, Seam Compounds, Sparon (Spar) Varnish, Engine Enamels, Canoe Enamels, Boat Bottom Seam Compound, Copper Bronze, Light Sea Green and Regatta Green Yacht Bottom Paints, etc.

C. A. WOOLSEY PAINT & COLOR CO., Jersey City, N. J., U. S. A.

Send for our Marine Booklets, Free—Contain Color Spots and information "How to Paint a Boat."



ROCHESTER "BILT-RITE" CRUISERS

are proving their worth in the hands of many satisfied users. Their sensible completeness is a source of unending joy to those who love a good boat. They are safe, seaworthy, comfortable and in short, the embodiment of everything desirable in modern yacht architecture. Our elegant DECK CABIN provides fifty foot accommodations in our forty footer, and adds three months to the cruising season.

By acting quickly you may still possess one for your 1920 cruise. Our catalogue gives full particulars.

We have equally interesting sizes 36, 45 and 55 feet.

ROCHESTER BOAT WORKS, INC.

Charlotte Station Rochester N. Y.

RITCHIE

ESTABLISHED 1850

For Seventy Years Ritchie Instruments have been the recognized Leaders in the Nautical Field

Your runabout cruiser or yacht is not properly equipped until Ritchie Instruments are installed. Flat Card Compass, illustrated, has great magnetic force, making the compass much easier to adjust in iron ships. 2 in. to 10 in.

Write today for your copy of our catalog. It contains the compass best suited for your boat.

E.S. RITCHIE & SONS

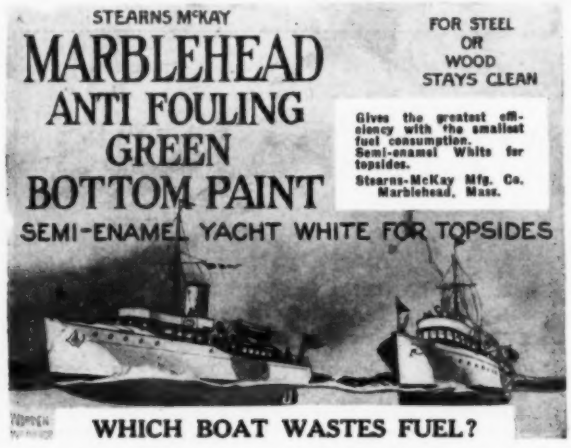
110 Cypress St., Brookline, Mass.

Richardson Boats are sturdy, seaworthy, and sure. And they are constructed with all the modern comforts that give pleasure, service and satisfaction to their owners.

Knockdown frames or complete outfit of the highest type built at the lowest possible cost.

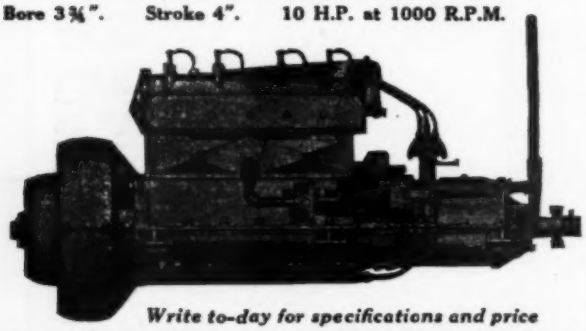
RICHARDSON BOAT COMPANY

370 Sweeney St. No. Tonawanda, N. Y.



Model F. Marine Motor

Bore 3¾". Stroke 4". 10 H.P. at 1000 R.P.M.



Write to-day for specifications and price

New Jersey Motor Sales Co., Keyport, N. J.

You Can Build Your Own Boat

and save 2/3 the cost
By the BROOKS K. D. SYSTEM

Brooks Boats are handsome, seaworthy, up-to-date in design and easy to build. We also build complete boats.

The Brooks Guarantee:
Your Money Back if You Are Not Satisfied

Send for catalogue showing all models.

BROOKS MFG. CO., 1101 Rust Ave., Saginaw, Mich.

ZUNDEL

This 6-volt Marine Horn combines distinctive marine appearance with a coarse heavy tone. The horn is of the vibrator type, with a very small current consumption; non-arcing, black enamel face, highly polished brass projector for salt water use. 9" high, 4" wide at base, weighs 2⅝ lbs.

Price $10.50

Brass Hand Bilge Pumps. Double Action with 5 Foot Hose.

1⅛"x15" Price.....$2.75
1½"x15" Price..... 4.00

44 WHITEHALL STREET
Phone: Bowling Green 9157 **New York**

BOAT SUPPLIES

Know Your Engine's Temperature With the

BOYCE MOTO-METER

Engine efficiency depends on the temperature—a cold engine is wasting fuel. A too hot one means trouble—scored cylinders—pre-ignition—warped valves. The Boyce Moto-Meter registers every change from 32° to 212° F.

Let us send you a free copy of "Marine Engine Efficiency," by Gerald Taylor White.

Price, $18.00 complete with 5 ft. of tubing ready to install.

THE MOTO-METER CO., INC.
Long Island City, New York

BOYCE MOTO METER

A Hand Tool Producing Accurate Results That Surpass an Expensive Power Driven Machine

Adjustable on all types of motors.
One simple operation for adjustment.
Guaranteed accuracy to one-quarter thousandths of an inch.
Can be operated without removing shaft from engine.
A Peters' Crankshaft Grinder will true egg-shaped crank pins in one-fifth the time ordinarily required by any other method.

Price, $75.00.

Aluminum Brazing Solder Company
Widener Building Philadelphia, Pa.

PETERS Patented
CRANKSHAFT GRINDER

Advertising Index will be found on page 142

MARINE ELECTRICAL EQUIPMENTS

SHIPS TELEGRAPHS

SINCE 1845 WE HAVE BEEN DESIGNERS AND MANUFACTURERS OF COMMUNICATING AND SIGNALLING SYSTEMS FOR NAVAL AND MERCHANT VESSELS.

CORY ELECTRICAL AND MECHANICAL TELEGRAPHS AND LIGHTING EQUIPMENTS ARE THE RECOGNIZED STANDARDS.

CHAS. CORY & SON, Inc.

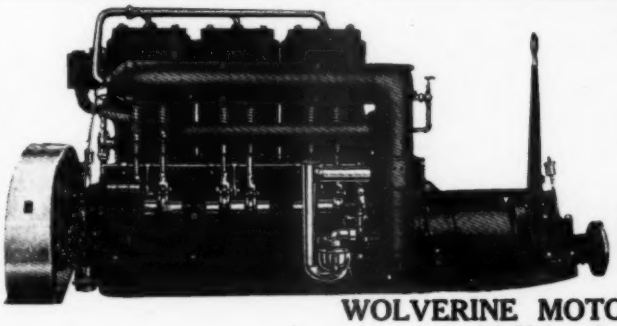
NEW YORK
290 Hudson Street
Main Office and Factory

PHILADELPHIA
207 Market Street

CORY SAFETY SERVICE

SEATTLE
83 Columbia Street

SAN FRANCISCO
11 Mission Street



"WOLVERINE"

The Motor with the Bore and Stroke

HEAVY DUTY MARINE ENGINES

KEROSENE

Used successfully for 15 years.

Device built into engine.

WOLVERINE MOTOR WORKS
33 Union Avenue
Bridgeport, Conn., U. S. A.

(Formerly Grand Rapids, Mich.)

Catalogue No. 113 gives full information

Improved Motor Boat Closet

Figure 1404

Dimensions: 18 x 18 x 11" high to top of bowl; 2½" cylinder. For above or below water line.

The best little closet on the market today, possessing many of the advantages of the large size toilet. All brass and porcelain. Oak seat and cover.

All prices subject to market advances, which are continually changing.

THE J. H. CURTISS CO.

The J. H. Curtiss Co.

Pioneer Specialists in Marine Sanitary Fixtures

Since our advertisement appeared in the first issue of MoTor BoatinG, December, 1907, hundreds of Curtiss fixtures have been installed in motor cruisers and yachts of all sizes, including some of the finest boats launched within this period.

The Curtiss line is exceptionally complete, varied in type, size and price to meet every possible requirement. Each model has been designed in accordance with our wide experience in boat work and can be depended upon in quality, service and durability no matter whether it is our highest or lowest priced model.

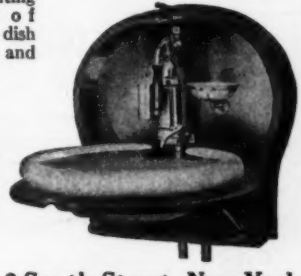
"PRICES ON APPLICATION"

With Pump

Cock on pump swings upward, thus preventing breaking of bowl. Soap-dish is porcelain and removable.

No. 5
Height, 19 in.
Width, 19 in.
Depth Closed, 6 inches.
Quartered Oak Case, or Mahogany Case.

Lining and Fixtures Nickel-plated. Porcelain Bowl. Mahogany or Quartered Oak Case.



2 South Street, New York

We also manufacture Universal Joints, Couplings, Stern and Thrust Bearings, Ball Races, Power Bilge Pumps.

The Michigan Reversible Propeller Wheel

Don't take up valuable room in your boat with a cumbersome and troublesome reverse gear.

With a Michigan Reversible Propeller on your boat you are free to navigate without danger of collisions and with the same safety as with a reverse gear costing many times more. Besides this you are saved the annoyance of repairs and break-downs so often occurring with a reverse gear.

Michigan Propeller Wheels are designed and constructed for service and results.

A propeller for your every need.

Write to-day for information.

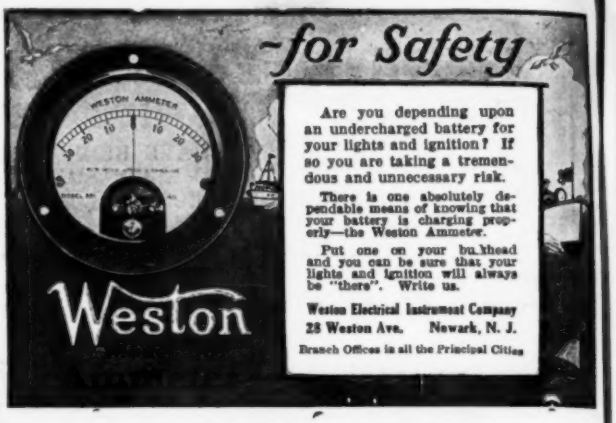
MICHIGAN WHEEL COMPANY
C. J. LITSCHER, Pres.
GRAND RAPIDS 1240 Monroe Ave. MICHIGAN

GAS-CO-LATOR
VISIBLE GASOLINE FILTER

A Positive Automatic Chamois Filter

Eliminates carbon trouble. Pays for itself. A necessity because the gas you are buying contains just the foreign substance that creates trouble, aggravation and expense. Write for details.

VISIBLE GASOLINE FILTER COMPANY
1426 S. Wabash Avenue, CHICAGO

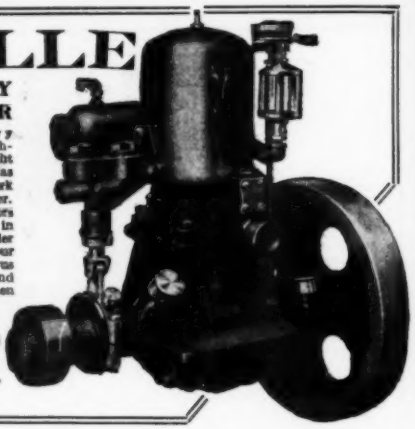

-for Safety
WESTON AMMETER
Weston
Are you depending upon an undercharged battery for your lights and ignition? If so you are taking a tremendous and unnecessary risk.
There is one absolutely dependable means of knowing that your battery is charging properly—the Weston Ammeter.
Put one on your bulkhead and you can be sure that your lights and ignition will always be "there". Write us.
Weston Electrical Instrument Company
28 Weston Ave. Newark, N. J.
Branch Offices in all the Principal Cities

Berling Magneto
WORTH MORE DOES MORE

ERICSSON MANUFACTURING CO.
BUFFALO, N. Y.

CAILLE
8 H. P. HEAVY DUTY MOTOR

Designed for heavy ferry duty and for fishing, oyster and light tugging purposes. Has no superior among work engines of same power. We also build motors from 2½ to 30 H.P. in one to four cylinder designs—two and four cycle types. Tell us size of your boat and service required when writing for catalog.



THE CAILLE PERFECTION MOTOR CO.
49 Caille Bldg., Detroit, Mich.

STRATFORD OAKUM
AND
CAULKING COTTON
used in Steam Yacht Lyndonia

meet all U. S. Government specifications and receive the highest classifications of American Bureau of Shipping and Lloyds Register of Shipping.

YACHT DEPARTMENT
George Stratford Oakum Co., Jersey City, N. J.

Established 1875
L. NICKERSON
YACHT SAIL MAKER
Awnings, Tents, Flags, Covers and Canvas Goods for All Purposes
TENTS TO RENT
173 STATE ST., corner COMMERCIAL
BOSTON, MASS.

HESS MONO-MARINE

Most serviceable and economical heavy duty 4-5 H.P. engine. Many of its component parts interchangeable with standard Ford engine parts. Complete engine includes—Hot-Spot Manifold, Bosch High Tension Magneto, Stromberg Carburetor, Weedless Propeller—complete only $145.00.

Send for catalog.

DEALERS: Our agency offers the most popular and the best seller on the market.

HESS MOTOR COMPANY
120-130 Sherman St., Detroit, Michigan

The Gordon Silencer and Under-Water Exhaust

No Noise No Smoke
No Pounding No Grease
Does not retard motor

With Fresh or Salt Water Fittings

F. O. B. Cleveland

$12.00

The Gordon Propeller & Mfg. Co.
9001 Desmond Ave. Cleveland, Ohio

Advertising Index will be found on page 142

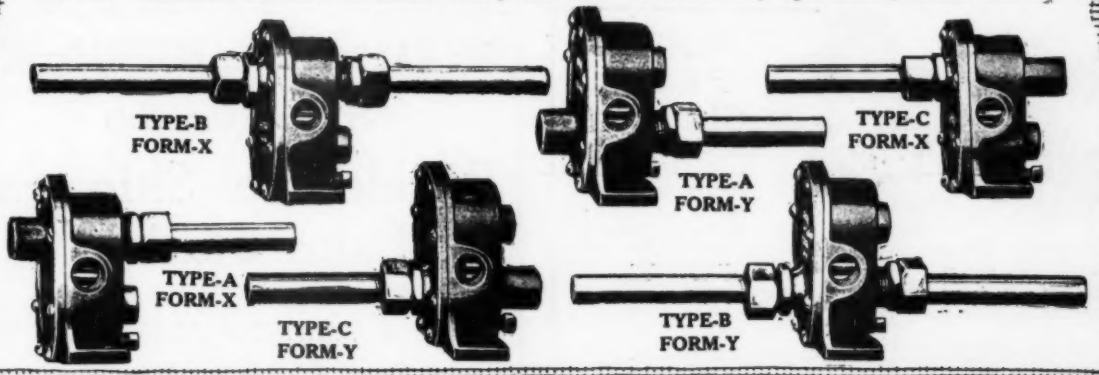
PUMPS

The finest power plant made will not operate properly if it is equipped with an inferior pump, whether it supplies water, fuel or oil.

OBERDORFER BRONZE GEARED PUMPS

are built especially for marine use—they are made to withstand the hard service encountered in use on board boat—*Oberdorfer Bronze Geared Pumps* are noiseless, automatic, compact and reliable. The supply of water, fuel or oil is governed entirely by the motor—*there is never an over or under supply.* If you have ever had trouble with your pump you will find a world of satisfaction in the trouble-proof Oberdorfer.
If you own a boat powered with an internal combustion engine you will be interested in our new book on pumps. Your copy is ready for you—it comes *free* on your request.

M. L. OBERDORFER BRASS CO., 816 E. Water St., Syracuse, New York



MASCO AVAVA MASCO AVAVA MASCO AVAVA MASCO AVAVA MASCO AVAVA MASCO AVAVA

MASCO PRODUCTS

FOR YACHT AND MOTOR BOAT

The 1-lb. cloth bag of Motor Waste

You cannot call your boat fully in commission without these Masco Products in your equipment locker. There is a Masco grade of cotton products for every marine requirement.

MASSASOIT MANUFACTURING COMPANY
FALL RIVER, MASS.

A Masco Marine Handled Mop

Ask your dealer for these Masco Products when you are stocking up.

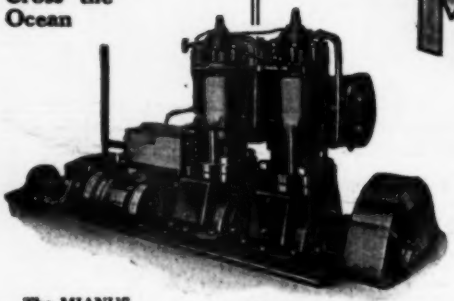
Caulking Cotton in 1-lb. rolls

THE MASCO MARINE PRODUCTS

Masco Motor Waste, Marine Handled Mops, Cleaning and Polishing Cloths, Yacht Caulking and Cotton Packing.

MASCO AVAVA MASCO AVAVA MASCO AVAVA MASCO AVAVA MASCO AVAVA MASCO AVAVA

Picked to Cross the Ocean



The MIANUS Heavy Oil Engine (Loisaner System)

MIANUS MARINE MOTORS

Heavy Oil Engines

When Wm. Washburn Nutting wanted the most reliable engine he could find to power his 45-ft. "Typhoon", built especially for crossing the Atlantic, he studied the whole marine market—and selected the 7½ H.P. Mianus Oil Engine.

You know the fuel economy of a heavy oil engine. With this economy we combine extreme simplicity and absolute reliability. You ought to know more about this engine. Write today for Bulletin "O".

THE MIANUS MOTOR WORKS
STAMFORD, CONN., U. S. A.

New York, N. Y. Boston, Mass. Baltimore, Md. Portland, Me. Eastport, Me. Norfolk, Va. St. John, N. B.

WATER PROOF CLOTHING

Real waterproof clothing that outlasts three or four of the ordinary waterproof garments. The only known clothing that is also proof against the action of acids, alkali or copper water.

Ask your dealer—don't accept substitutes. The only line for live Marine Dealers. Write for proposition.

Gold Medal Waterproofing Co.
Oakland California

ONE WAY ONLY—THE BEST WAY—BUY!

We Sell Our Sets

Wireless for Ship *and* Land Stations

CUTTING & WASHINGTON RADIO CORPORATION
GENERAL OFFICES
6 and 8 West 48th Street, New York, N. Y.

NILSON BUILT

means the highest quality of Workmanship and Finish. "Honest Boats —Honestly Built."

Let us figure with you.

The Nilson Yacht Building Co., Inc.
Spring Garden Baltimore, Md.

KA-U-RI TRADE MARK

(Pronounced Courie)

Waterproof Spar Varnish

For all OUTSIDE AND INSIDE work. Guaranteed not to scratch white, turn white, in salt or fresh water, chip, crack or bloom.

Try it on your boat. Sold everywhere.

BROOKLYN VARNISH MFG. CO.
BROOKLYN, NEW YORK

America's Finest Motor Boats

Whatever you want—Runabout, Speed Boat, Cruiser, Rowboat or Canoe.

There's a **Racine Wis** Made for you

—or we will design and build one to meet your needs.
Tell us the type of boat in which you are interested and we will mail you our special catalog immediately.
RACINE BOAT COMPANY, 1812 Clark St., Racine, Wisconsin

BOYCE AUTOMATIC FIRE EXTINGUISHER

PRICES
Model 1..$6.00
Model 2 (for larger cars and trucks) .. 8.00

90% of all automobile fires start under the hood. The Boyce Automatic extinguishes such a fire the instant it starts.
The heat melts fuse. Contents of extinguisher is sprayed over motor, forming a blanket of fire-destroying gas.

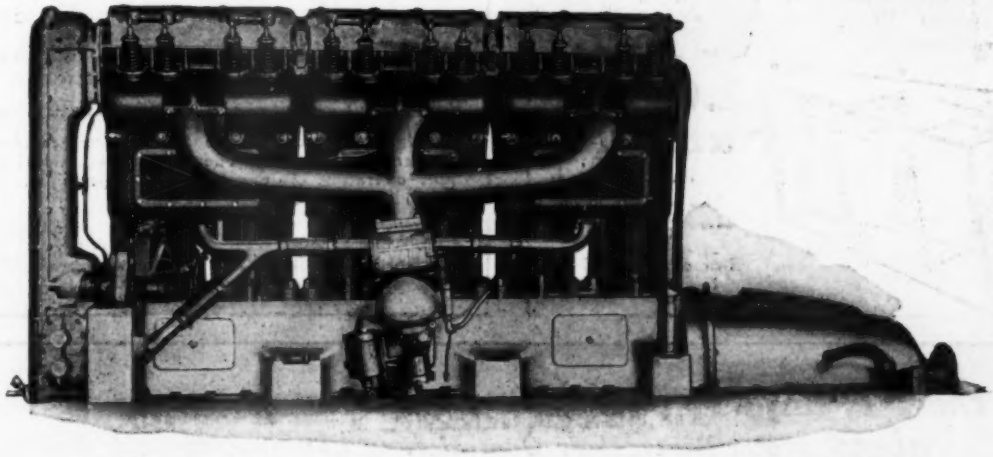
BOYCE - VEEDER CORPORATION
Long Island City - - - New York

Advertising Index will be found on page 142

WINTER·STORAGE – AN·IDEAL
LOCATION·AT·WHICH·TO·LAY·UP·YOUR
BOAT·OR·TO·BUILD·A·NEW·ONE –

LUDERS·MARINE·CONST·CO
50·MINUTES
FROM·N·Y·CITY·
STAMFORD
CONN

America's Premier High Speed Engine



Model J-6. Six Cyl. 7" x 9". 400 H.P. at 1500 R.P.M. Weight complete 3900 lbs.

Murray & Tregurtha Engines Are Designed and Built for the Yachtsman Who Demands More Than Mechanical Excellence

Murray & Tregurtha Corp.
Atlantic, Mass.

THE MOTOR-BOAT FLASHLIGHT ABSOLUTELY WATERPROOF

$5 $5

A Light When You Want It. Weighs Only One Pound.

No Batteries to Burn Out. Lasts a Life Time.

THE ONLY FLASHLIGHT THAT GENERATES ITS OWN CURRENT

THE only perfect flashlight for marine use. Simply by pulling chain, this light generates its own current from a series of magnets. No batteries required—no recharging—nothing to wear out. Each pull on the chain generates enough power to produce a brilliant, lasting flash. Supplied with cord to hang around the neck. Get one today from your dealer or remit direct.

THE ART METAL WORKS
ARONSON SQUARE NEWARK, N. J.

Real Service to Our Customers

Tell us what you need. Be it large or small your inquiry will receive individual attention.

Honest Goods at Honest Prices.
Anything for a boat or ship.

BOSTON MARINE HARDWARE CO
259 Atlantic Ave Boston, Mass.

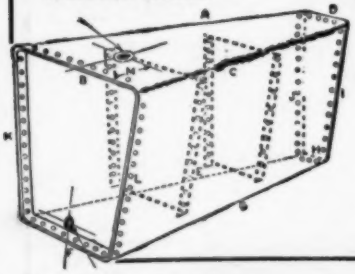
GEARS

Bevel gears,—spur, worm, spiral, mitre, internal, elliptical gears—any type made to your specifications. We are gear specialists and have special facilities for cutting all kinds of gears. Accuracy unequalled, quality the best.

Send blueprints today for quotations.

The Bilgram Machine Works
1234 Spring Garden St.,
Philadelphia, Pa.

Gasoline Tanks, Air Whistle Tanks, Mufflers, Stacks, Special Plate and Sheet Metal Work for Pleasure Boats.



L. O. KOVEN & BROTHER
Main Office,
158 Ogden Ave.,
Jersey City, N. J.

Branch, 50 Cliff St.,
New York City.

"Western" Diesel Engines

Marine and Stationary Types

Sizes: 25 B.H.P. Per Working Cylinder in single and multiples up to six cylinders.

Fuel: Low gravity oils in their natural state.

No high pressure injection air compressors nor high pressure fuel pumps. The simplest successful engine built operating on the true Diesel principle. Write for Bulletin No. 528.

WESTERN MACHINERY COMPANY
928 North Main Street, Los Angeles, California, U. S. A.
Branch: Rialto Bldg., San Francisco

If there is anything you want to know about ***Motor Boats, their Operation or Equipment, Boat Building Navigation, Marine Motors, Motor Operation and Maintenance, etc., etc.,***

—you'll find just the information you need, written in readable non-technical style and illustrated clearly with countless special drawings and diagrams, in

MOTOR BOATING PRACTICAL HAND-BOOKS

Turn to page 130 of this magazine and see all the subjects covered. You need the entire set of six volumes in your library or aboard your boat—always ready for reference. Here you will find the condensed experiences of hundreds of boat owners. The most valuable and popular set of Motor Boating books ever written. Send your order today.

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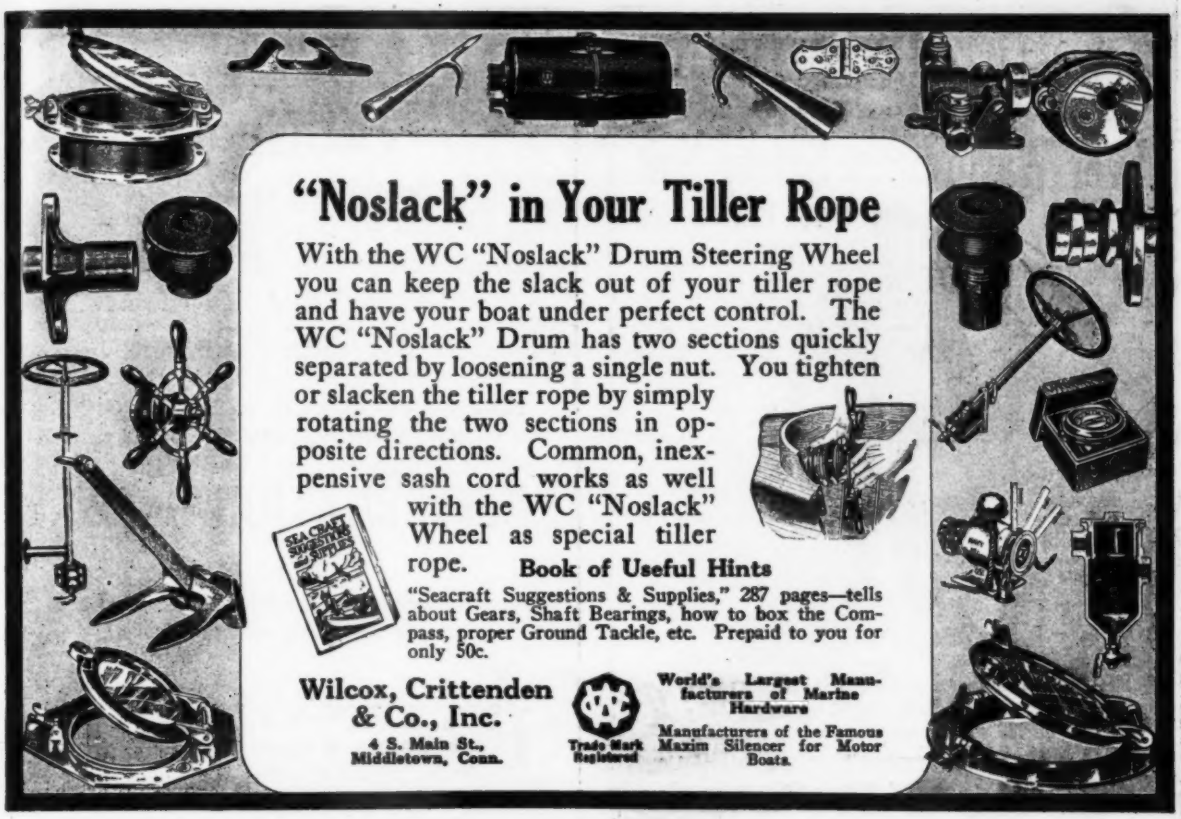


"Noslack" in Your Tiller Rope

With the WC "Noslack" Drum Steering Wheel you can keep the slack out of your tiller rope and have your boat under perfect control. The WC "Noslack" Drum has two sections quickly separated by loosening a single nut. You tighten or slacken the tiller rope by simply rotating the two sections in opposite directions. Common, inexpensive sash cord works as well with the WC "Noslack" Wheel as special tiller rope.

Book of Useful Hints

"Seacraft Suggestions & Supplies," 287 pages—tells about Gears, Shaft Bearings, how to box the Compass, proper Ground Tackle, etc. Prepaid to you for only 50c.

Wilcox, Crittenden & Co., Inc.
4 S. Main St., Middletown, Conn.

Trade Mark Registered

World's Largest Manufacturers of Marine Hardware

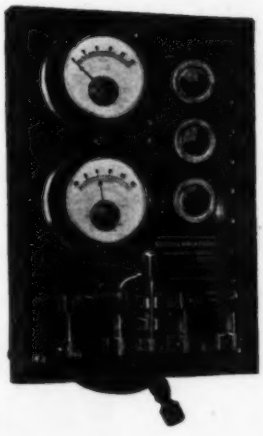
Manufacturers of the Famous Maxim Silencer for Motor Boats.

LEBBY

LOW VOLTAGE SEARCHLIGHTS

7, 10 & 14 Inch 6, 12, 32 & 110 Volts

Easily Focussed



7-Inch Searchlight	$23.80
10-Inch Searchlight	46.75
14-Inch Searchlight	85.00

LEBBY BOAT LIGHTING SYSTEMS

6 Volts, for 6 Lamps	$97.75
12 Volts, for 10 Lamps	170.00
12 Volts, for 16 Lamps	246.50
32 Volts, for 20 Lamps	340.00

Send us your order today, or write for complete descriptions of Lebby Products

SOUTHLAND STEAMSHIP COMPANY

LEBBY PRODUCTS DEPT., SAVANNAH, GA., U. S. A.

A WORLD *of* OPPORTUNITIES

Where there are ships there is need of the

Ever-Warm *100 Per Cent Safety at Sea* Safety-Suit

You Can't Chill **You Can't Drown**

THE Ever-Warm Safety-Suit has had the chance to prove its ability to save life at sea under any and all conditions that occur in maritime tragedies.

That it made good is best indicated by the fact that it is **Used and Approved by the U. S. Navy.** Wherever there are human beings entrusting their lives to the perils of the sea in northern ice-infested waters or the turbulent storm-swept seas of temperate and tropic zones — everywhere on sea, river and lake—in large and small craft there should be Ever-Warm Safety-Suits.

WE say every boat should be FULLY equipped with Ever-Warm Safety-Suits because it is the only life saving device that has made good. Not air inflated—buoyancy is indestructible. Slips on in a minute like a union suit. Keeps you afloat indefinitely WARM and DRY. There is a pocket for food. Something may happen on your next trip to make you sorry you haven't an "Ever-Warm" aboard — sometimes it is too late to feel sorry. The thing to do is to write now and

Ask for Illustrated Booklet No. 23

It tells all about the Ever-Warm Safety-Suit for which

Agencies in some Foreign Countries and U. S. are still open.

Write at once for terms

National Life Preserver Company

11 BROADWAY, NEW YORK

Ocean Voyagers Ask About Rental Plan!

GUNNING — FISHING — CRUISING —

In September and October

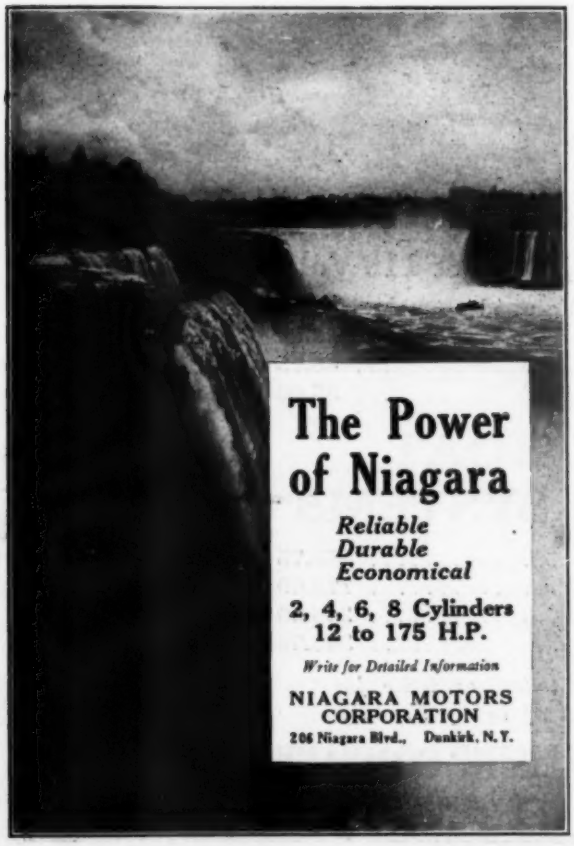
EVER TRY IT? IT WILL PUT YOU IN TRIM FOR THE WINTER'S WORK.

YOU HAVE MISSED A LOT IF YOU HAVE NEVER ENJOYED AN

"INTERNATIONAL 32"

May we book your order for one of these cruisers for September delivery?

INTERNATIONAL
Shipbuilding & Marine Eng'g Corp.
NYACK NEW YORK U. S. A.



The Power of Niagara

Reliable
Durable
Economical

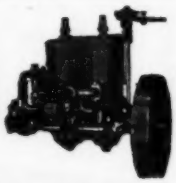
2, 4, 6, 8 Cylinders
12 to 175 H.P.

Write for Detailed Information

NIAGARA MOTORS CORPORATION
206 Niagara Blvd., Dunkirk, N.Y.

K-1
2½ HP.
36 LB.

LONG LIFE
LIGHT
WEIGHT



WATERMAN MOTORS QUALITY PRODUCTS

Aluminum Crankcase
Copper Jacket

Built for Better Service

by

3 HP.
69 LB.

Arrow Motor & Mach. Co.

R-4
5-6 HP.
111 LB.

Newark, N. J., U. S. A.
Foreign Sales Manager
J. E. Sitterly
47 Broadway, New York, N. Y.

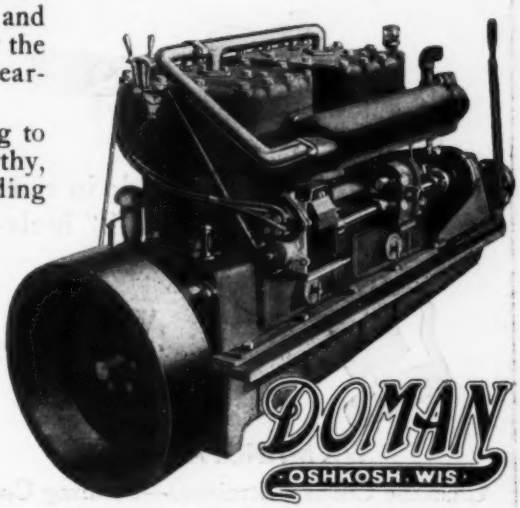
Advertising Index will be found on page 142

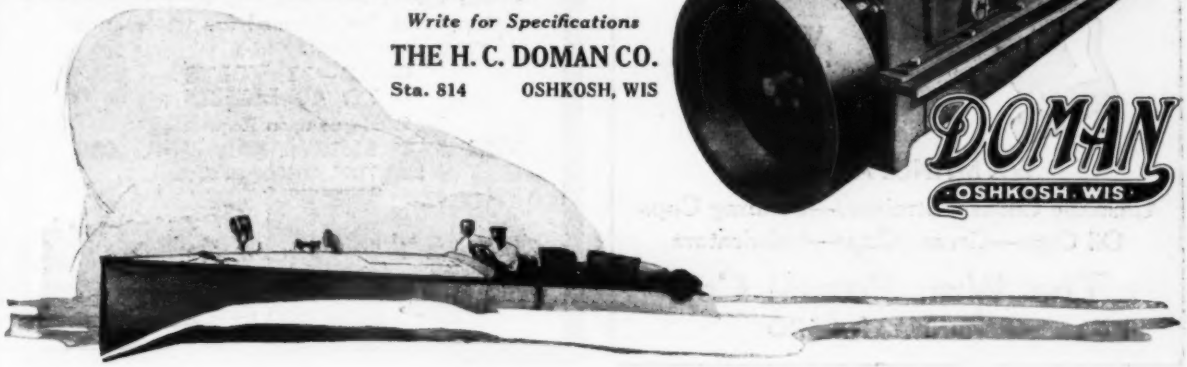
Why Boatmen Are Turning to Doman

Doman engines make their records on the water — not alone on the testing block. Rigidly inspected and tested before leaving the factory, the consistent performance and long life of this power plant is made doubly secure by the use of over-size water-jackets, large bronze-backed bearings, giant valves, and a leak-proof oiling system.

Every day sees a greater number of boatmen turning to Doman for a marine motor built to deliver trustworthy, economical power for a term of service far exceeding the average.

Before you buy a new boat or re-engine your old one, investigate the Doman. Special kerosene burning equipment optional.



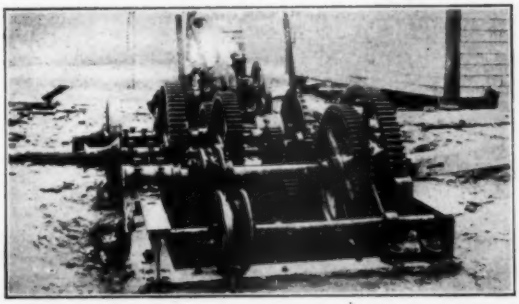


Write for Specifications

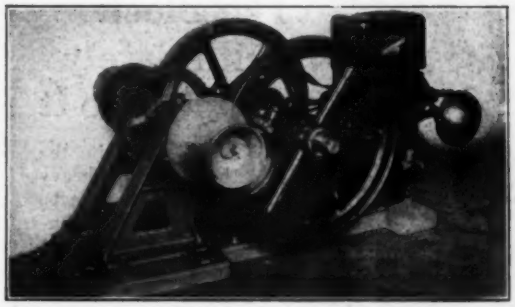
THE H. C. DOMAN CO.

Sta. 814 OSHKOSH, WIS

GRAY-ALDRICH COMPANY
MARINE HOISTS



Hauling Outfits for Marine Railways



Winch Hoists for Vessels

WINDLASS HOIST ATTACHMENTS—CARGO HOISTS
WINCH HOISTS FOR SEINES AND FLOUNDER DRAGS
A FEW REBUILT MARINE AND STATIONARY ENGINES

Send Us Your Inquiries

GRAY-ALDRICH CO., Inc., 84 Atlantic Ave., Boston, Mass.

POWELL

"ADJUSTO"
GENERATOR-VALVE

Made in sizes ⅜ to 2″ inclusive.

Write for "Adjusto" Circular.

WE MANUFACTURE
Gasoline Cocks—Strainers—Priming Cups
Oil Cups—Grease Cups—Lubricators

The Wm. Powell Co.
CINCINNATI, OHIO

MOTOR BOAT LIGHTING AND IGNITION SYSTEMS

A proven product of 15 years' actual use by the Motor Boat Trade.

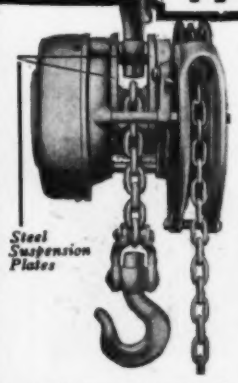
Made up in combinations of Dynamo-Battery and Switchboard for water craft of every description.

6—12—32 VOLTS
4 TO 40 LIGHTS

Catalogue upon Request

THE A-C ELECTRICAL MFG. CO.
DAYTON, OHIO, U. S. A.

YALE



The Block with Safety Built Into It

MANY times in the handling of heavy equipment, engine parts, plates, ribs, etc., some unusual lifting job will put a tremendous strain on the suspension members of your chain blocks.

Ordinary cast suspension members might break under the strain. But the steel suspension plates of the Yale Spur-geared Block safely carry the load.

The economy of the speedy and powerful Yale Chain Block, or Electric Hoist, makes it the first choice of the careful buyer.

Yale Chain Blocks are carried in stock by all representative supply houses. Our new Hoist Catalog explains the details. Write for it.

For a Factory Locking Equipment Use a Yale Master Key System.

The Yale & Towne Mfg. Co.
Makers of the Yale Locks
Stamford **Connecticut**

SPUR-GEARED BLOCK

TRADE MARK

The Bosch Magneto trade mark on a magneto or a magneto part carries this definite message: "I signify the genuine—I am the guardian of quality. The product upon which I am stamped is worthy of the name 'America's Supreme Ignition System'. I assure the manufacturer, the trade and the public of supreme service and absolute satisfaction."

Be Satisfied **Specify Bosch**

300 Service Stations in 300 Centers
AMERICAN BOSCH MAGNETO CORPORATION
Main Office and Works: Springfield, Mass.
Branches: New York, Chicago, Detroit, San Francisco

BOSCH

Advertising Index will be found on page 142

Inverted V-Bottom and Surface Propeller Boats.

SEA SLED

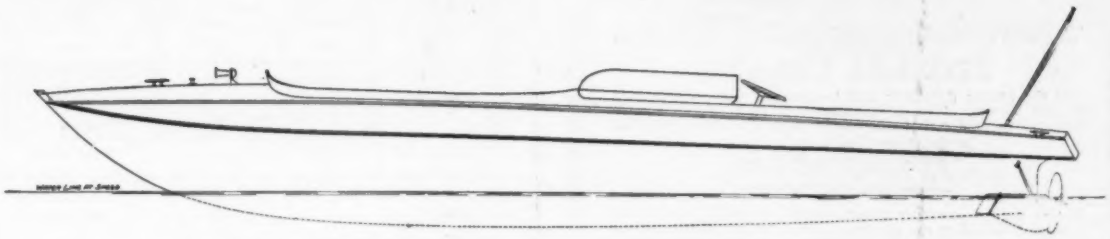
Hickman Patents in all countries.

Trade Mark Reg. U. S. Pat. Off.

A New Development

The Displacement Sea Sled

A Sea Sled for Low-Power Motors



Non-fouling in the heaviest weed-growths. Shoal draught. Fast. Efficient. Graceful. Dry. Stable. Seaworthy. Safe. A development that brings the Sea Sled within reach of everybody.

Moderate Power *Moderate Cost*

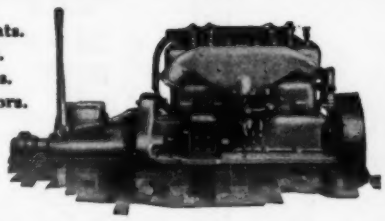
Write:

THE SEA SLED COMPANY

Boston Mass.

G. H. MASTEN CO., Inc.

Eastern and Export Agents.
Vulcan Marine Engines.
Caille Perfection Motors.
Wisconsin Outboard Motors.



Manufacturers of Motor Boat Tops, Spray Hoods, Life Rafts, Life Preserver Cushions, etc.

Write for Catalogue Today.

OBEY THE LAW!

Masten Reversible Life Preservers make this possible. They have Gov't approval and carry our guarantee of satisfaction or your money back.

Masten Life Preservers for all purposes are of Masten standard and most economical in price.

Motor Boats, Motors, Marine Accessories and Supplies

[Swim with the] "Liberty" Swimming Belt

Learn to swim in half an hour. Just make the strokes,—the "Liberty" will hold you up. They make a beginner a swimmer — a swimmer an expert.

Your Dealer will Supply You. $2.00 by Mail.

YOUR DEALER CARRIES MASTEN EQUIPMENT.

G. H. MASTEN COMPANY, Inc., New York City
Display Showroom, 38 East 9th Street, ½ block West of Wanamaker's

More Important Than Initial Cost–

—is the proven durability and low upkeep cost of Wisconsin Marine Motors. Wise boat owners are glad to pay a trifle more for an engine that will run for months without attention.

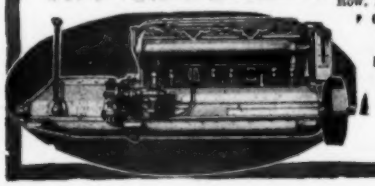
Wisconsin

Motors are so carefully fitted, adjusted, run-in, tested and inspected that they are *operation perfect* when they leave the shops—*ready to run* when installed.
This adds to *our* cost, but ultimately the slightly higher price of a Wisconsin means *less cost to you.*

Write for Specifications

WISCONSIN MOTOR MANUFACTURING CO.
Station A, Dept. 302, Milwaukee, Wisconsin

DISTRIBUTORS:
New York Branch: T. M. Fenner, Factory Representative, 21 Park Row, New York, N. Y.
California Distributor: Earl P. Cooper Co., Los Angeles, Cal.
Northwest Distributor: Chandler-Dunlap Co., Seattle, Wash.



DOES YOUR BOAT LEAK?

Send for our Booklets "How to Make Your Boat Leakproof" and "Marine Glue—What to Use and How to Use It."

Any old boat, so long as the frames are in fair condition, can be made water-tight by following the instructions in the above booklets. This applies to anything that floats, from a canoe to a yacht—wood or steel.

Put your leak troubles up to us and we will help you to stop them.

For more than 75 years Jeffery's Marine Glue has been the choice of the foremost boat builders of the world.

Jeffery's is a product that has not varied from the strict line of quality—it is not a competitive commodity made to meet a price.

JEFFERY'S WATER-PROOF MARINE GLUE
IN ALL THE VARIOUS GRADES

For sale by all Yacht, Boat and Canoe Supply Houses; Hardware, Paint and Oil and Sporting Goods Dealers.

L. W. FERDINAND & CO.
152 Kneeland Street Boston, Mass.

TIEBOUT'S

LOCKS AND LATCHES FOR DOORS AND HATCHES

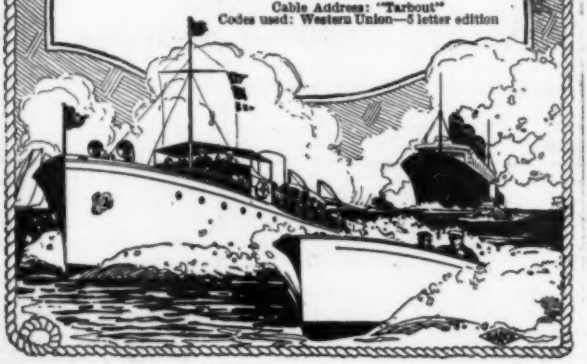
Established 1853 Incorporated 1892

MARINE HARDWARE

Steamship, powerboat and shipyard supplies. Complete joiner equipment for Steamships, Yachts, Motorboats and Tugs. Foreign designs duplicated in any size, quality, finish.

Prompt delivery. Secure packing for export. Send for illustrated catalogue.

W. & J. TIEBOUT
118 Chambers St., New York
Cable Address: "Tarbout"
Codes used: Western Union—5 letter edition



"JASCO" SAFETY FIRST TANK

UNLESS you *know* that your tank is absolutely leak-proof you can never *feel certain* that you are securely safeguarded against loss by fire and explosion.

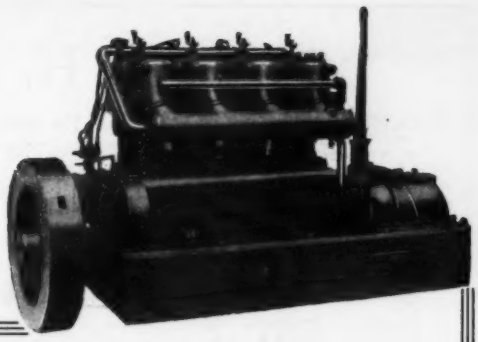
The "Jasco" Tank is more than a mere container—it's a positive protector of life and property. Made of the finest seamless drawn steel—tested and proved—it will not leak no matter how rough the service. A "Jasco" Tank will make any boat—*your* boat—a better boat. Send for booklet and detailed information.

JANNEY, STEINMETZ COMPANY&
MAIN OFFICE, PHILADELPHIA
New York ffice, Hudson Terminal Buildin

Advertising Index will be found on page 142

PALMER ENGINES
TRADE MARK REG. U.S.PAT. OFF.

The Old Reliable



FOUR CYCLE
3½ H.P. to 80 H.P.
One to Six Cylinders

TWO CYCLE
2½ H.P. to 10 H.P.
One and Two Cylinders

Palmer engines have been used extensively for twenty-five years in both pleasure and work boats. You'll find them in nearly every country on the earth.

Write for Catalogs

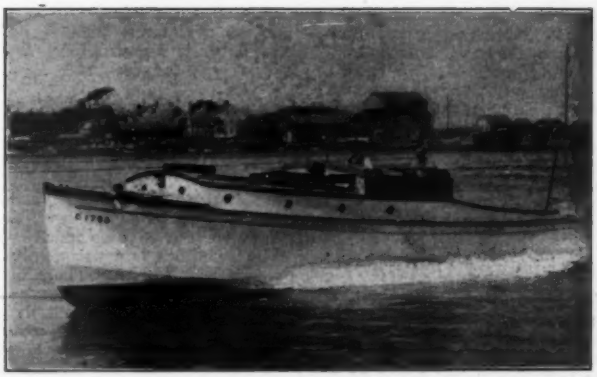
PALMER BROS. ENGINES, INC., COS COB, CONN.

Branches and Distributors

NEW YORK PHILADELPHIA BALTIMORE NORFOLK PORTLAND SEATTLE VANCOUVER

My Catalog Will Prove Interesting to All Who Like Motor Boats. Send Stamp for 1920 Issue of

HAND-V-BOTTOM
MOTOR BOAT DESIGNS

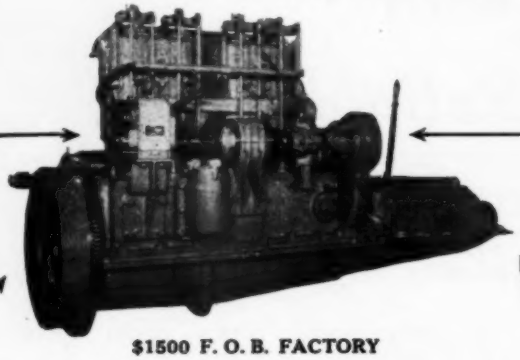


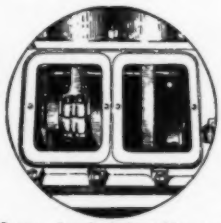
WILLIAM H. HAND, Jr. - *Naval Architect* - New Bedford, Mass.

40 H. P. Medium Duty Motor

Its accessibility is shown in part by the accompanying cuts.
The result of twenty years' motor building experience.

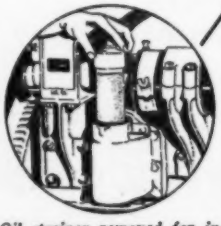
The cylinder head removed for the grinding of valves and cleaning of carbon





Large hand hole plate removed by the loosening of hand wheel permanently attached to hand hole plate

$1500 F. O. B. FACTORY



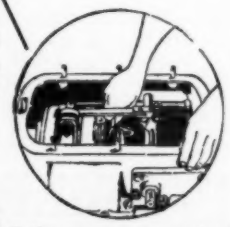
Oil strainer removed for inspection and cleaning by the loosening of three wing nuts

The Knox marine motor boxed for export occupies 55.3 cu. ft. It is 3' 11" x 2' 7" x 6' 2" and weighs 1350 pounds gross, 950 pounds net. Price for export boxing, $35.00. Freight paid through to New York, $8.00.

Write for free illustrated catalogue

Knox Motors Associates

Springfield, Mass., U. S. A.



Entire reverse gear exposed for inspection and adjustment by the removal of eight wing nuts

Lyndonia, the Newest 230-Foot Yacht

(*Continued from page* 16)

paneling with furniture of the William and Mary period, presents a rare, artistic room, and one hardly appreciates that such a room beautiful is the living room on a yacht. Nevasplit paneling has been used most extensively throughout. Forward is the owner's suite consisting of two rooms and bath running athwartships. Sliding doors open the two bedrooms into one large one in which two three-quarter beds are arranged in company with appropriate bedroom furniture representing the Adam period. A spotless bathroom adjoins, fitted with all modern bath and toilet appliances with tiled floor and walls. The electric fixtures and hangings of the stateroom emphasize the design of the period, and the restful appearance of it all emanates from its simple grandeur.

A winding staircase on the starboard side of the saloon leads down to six guests' staterooms, all finished in enamel, each with a private bath. Simply, yet exquisitely furnished these guest rooms present a homelikeness expressing a warmth of feeling which surely only the owner could have suggested.

Two engines with an indicated horsepower of 1,000 each, together with boilers occupy the engine and fire room compartment about amidships. The electric lighting plant, refrigerating machinery, blowers, etc., also are located in this compartment. Just forward of the engine room the laundry is arranged. Washing machines, mangles and dryers are installed.

After her trials in the Hudson River, the Lyndonia sailed for Camden, Maine, the summer home of her owner, Cyrus H. K. Curtis. At the present time it is understood that this new yacht is cruising in the St. Lawrence.

The Interior Decoration of Lyndonia

One of the most delightful features of the Lyndonia is the fact that the decorators and furniture designers were called in at the very start, a wise proceeding that contributed much to the unity and perfect coordination of the finished ensemble. Too often the artist is left until toward the last when he has to meet adverse fixed conditions instead of being free to design effectively.

The considerable dimensions of Lyndonia, and the desire of the owner for unusual comfort, simplicity, and high quality, made the problem of the furnishings exceedingly important. This is particularly true when it is considered that the usual formula in yacht decoration is magnificence, as much of it as possible, regardless of good taste. In fact, the private yacht has been for years regarded as an extravagance largely through unskillful treatment. Even some of the latest and finest ocean liners err seriously in this respect, being even more pretentious than palaces.

In order to be fully assured that Lyndonia would be a completely satisfactory expression of the owner's requirements, and a unit artistically, in which all the floor coverings, furniture, and draperies would be in perfect harmony with each other, and the Sea, the largest and oldest house in the country, was called in to take entire charge.

The interior illustrations which we print are little more than suggestive, and certainly do scant justice to the highly successful results accomplished. All of the furniture was specially designed and built to order by hand. There are more details of interest than could be mentioned in a long article.

The designing was done from the technical drawings of the vessel and the designers began their work when the ship was started.

Leaving the deck, the staircase to the lounge is supplied with a hand rail of non-corrosive metal which will hold its original finish perfectly.

The lounge room of the Lyndonia is a charming example of Sloane's facility. It is an interpretation of the atmosphere of the simple small English country houses which developed so charmingly, inside and out, during the days when Sir Christopher Wren gave so much impetus to English art and culture. The furniture is consequently comfortable and the tone of the room most restful. There are bookcases and sofas, in addition to deep easy chairs, and the effect is in striking and agreeable contrast to the usual magnificent saloon.

In the owner's room is manifested the same delightful combination of simplicity, beauty, taste and comfort. This room is in the mood of a French villa, pink and gray, with prettily paneled walls and figured curtains. The light stand is built in the wall, in a convenient and artistic manner, and the round breakfast table is a lovely example of the heights in design which W. & J. Sloane seem invariably to reach. The furniture is expressed in walnut.

(*Continued on page* 84)

Advertising Index will be found on page 142

THE JOHNSON MARINE REVERSE GEAR

Built for Service

POWERFUL FRICTION CLUTCHES, with a grip that responds instantly from full speed ahead to full speed astern, and that holds on the long steady run without slipping, heating or appreciable wear.

HARDENED ALLOY STEEL in all gears and shafting; the material that gives ample strength with light weight and small bulk; working parts accurately finished, firmly supported, and hardened against wear.

BALL BEARINGS to take both the radial and propeller thrust loads incorporated in the gear itself, protecting it from shock and strain, giving a smoothness of operation that eliminates power loss and defies wear.

COMPLETELY ENCLOSED and oil tight, so that perfect lubrication is assured. Clutches and gearing flooded with oil. Nothing to clog or run dry and put the gear out of order.

These few simple facts easily explain why there is better service in the Johnson Gear.

For full particulars write Department 25

THE CARLYLE JOHNSON MACHINE CO. MANCHESTER CONN

Sailmakers for Eighty Years.

Exporters to all parts of the World.

MARINE HARDWARE and SUPPLIES

For Building and Equipping Commercial Craft

We carry a large stock of HARDWARE and ACCESSORIES of substantial design, built for hard use. These can be sold at prices considerably less than goods intended for pleasure boats.

Our 1920 Marine Catalogue describes this merchandise and is full of useful information for the boat owner. Forwarded on application. Send for it.

GEO·B·CARPENTER & CO.

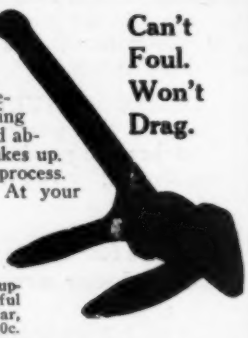
206 W. Austin Avenue **Chicago**

Bites Instantly

The WC Navy Anchor takes hold at the first pull of the cable, and the harder the tug, the firmer the hold.

WC Stockless Navy Anchor

Solid wrought iron shank; free from "pin hole." Lies in holding position at angle of 55° to flukes, per Navy Specifications. One-piece head; no mud gathering pockets. Tripping fin on head absolutely prevents dragging flukes up. Heavily galvanized by hot process. Proper shackle furnished. At your dealer's or write us.



Can't Foul. Won't Drag.

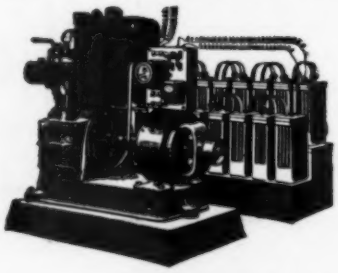
Get this Valuable Book

"Sea Craft Suggestions and Supplies"; over 275 pages of useful hints about Moorings, Steering Gear, Compasses, etc. Sent only for 50c.

WILCOX, CRITTENDEN & CO., Inc.
4 South Main Street **Middletown, Conn.**

GencoLight

MARINE LIGHTING PLANT



THE more you know about the fine points of electrical construction, the more will you appreciate the superiority of the Genco-Light Marine Plant. Built in 32 and 110-volt sizes up to 6 K-W, complete with battery, and suitable for every light and power service, afloat and ashore.

Live Dealers and Agents Wanted

GENERAL GAS - ELECTRIC CO.

Manufacturers **Hanover, Pa.**

C. W. Dean, Marine Distributor, Norfolk, Va.
P. O. Box 863 **Office: 417 William Street**

Mariner, a Diesel Electric Motor Ship

(*Continued from page 24*)

240 h.p. at 350 revolutions per minute and are direct connected to a 165 kw. 125-volt direct current generator. Normally these are operated in series and supply a 400 h.p. 250-volt, 200 r.p.m. motor coupled directly to the propeller shaft. The engines as well as the entire electric units have been specifically designed for heavy marine service. Provision has been made for the fact that the machines will not always remain level and also it has been remembered that sea water and moisture may find their way into the engine room and cause difficulties. To guard against these liabilities everything has been effectively waterproofed and protected.

In normal full speed cruising condition the motor has a range of from 160 to 200 r. p. m. at 250 volts. For slow speed cruising one engine is shut down entirely and the electric motor turns from 70 to 160 r. p. m. at 125 volts. The propeller on the other end of the motor shaft is of 94 inch diameter and 68 inch pitch and will push the ship up to 10½ knots. Under heavy load conditions when a full net is being dragged maximum horse power is developed at a slower speed of 160 r. p. m.

The engine room contains all control devices brought together in a main panel board. Here are mounted the many meters, switches, rheostats, fuses for all electrical equipment. All meters and instruments are special marine fixtures fitted with luminous dials in non-corrosive housings.

The control contactors similar to those on the high speed electric railways are mounted on the side of the ship and are readily accessible. If through accident or misfortune they do not function magnetically as they should they can be operated manually by an interlocking series of hand controls, which are so arranged that it is not possible to shift the controls in any other but the designed sequence.

In crowded waterways or rapid currents its superiority is very pronounced. The instantaneous reversal and maneuvering, possible from the pilot house, without the intermediary telegraph and signal systems being particularly noticeable.

For hauling the heavy fishing nets a 65 h.p. electric motor driven double drum winch is used and for cargo loading a 5 h.p. motor driven whip hoist is used. All other auxiliary machinery, such as bilge pumps, fresh water pumps, ventilation machinery, etc., is all electric motor driven by power furnished by the main motors, and when in port or at anchor the load is taken by a 15 kw., 125 volt set driven by a Fairbanks-Morse oil engine. An independent air compressor is also provided for the remote possibility that all starting air for the main motors has been lost. Since this compressor can be started by hand it would be used to fill the starting bottles in this emergency.

Fuel oil is carried in four tanks with a combined capacity of 17,000 gallons. This supply is sufficient to enable Mariner to cruise for 6,000 miles at full speed and should a lesser speed be sufficient will serve for 9,000 miles at three-quarters speed.

Preservation Without Ice

(*Continued from page 38*)

ture, and the process cannot be recommended; but meats may be preserved without chemicals as follows:

Place the meat in a hot oven until the surface is well browned. Pour melted lard or suet into a wide mouthed jar and roll it around until the sides and bottom are evenly coated to a depth of ½ inch. Place the meat in the jar, exercising care that the coating is not broken and fill up the remaining space with melted lard or suet, completely covering the meat. It is claimed that meat prepared in this way will keep for a long time, even in hot weather. When wanted for use, warm the container by immersing it in hot water until the meat can be removed and drain off the surplus grease, which may be used for cooking.

Tests have shown that powdered cork is very effective for preserving fresh fruits and vegetables. The bottom of a box is first covered with the cork and alternate layers of fruit or vegetables and cork are packed, care being exercised to separate each piece and fill the space between them with cork. The fruit should be wiped dry before packing.

Butter in waxed containers, cheese, meat, etc., if well wrapped in waxed paper will also keep fresh longer when packed in cork than if left exposed to light and air.

W. B. M., Newburgh, N. Y.

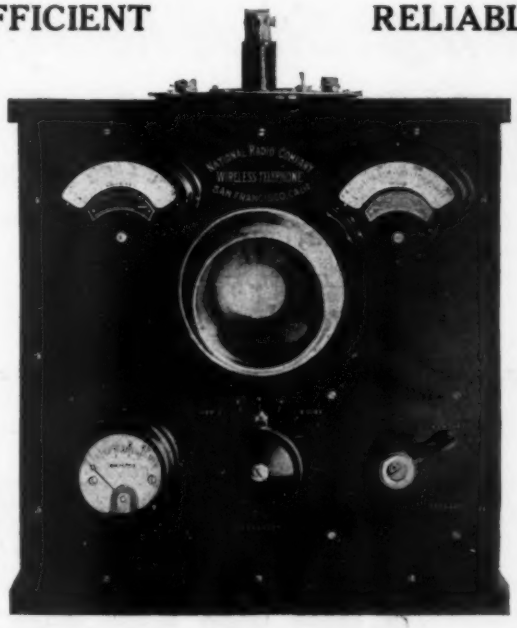
Advertising Index will be found on page 142

WIRELESS TELEPHONES
FOR
COMMERCIAL USE

Especially adapted for use on Private Yachts

EFFICIENT **RELIABLE**

So simple they can be operated by anyone able to talk.



Will not get out of order; require practically no attention.

Maximum service with minimum "upkeep" expense.

Little in size, but BIG in the service they give.

COMPACT **SERVICEABLE**

NATIONAL RADIO COMPANY'S WIRELESS TELEPHONE was the first to be used succesfully for a commercial wireless telephone message; this was between the Wanamaker Stores in New York and Philadelphia.

The first wireless telephone message received on an aeroplane was transmitted by this apparatus at Monterey, California.

In both the above cases the transmitted words were clear and distinct, but later improvements have so increased the volume and tone of the voice waves in the present instrument that perfect reproduction of sound is secured.

Fully protected by patents in the U. S. and 29 foreign countries.

SOLD UNDER POSITIVE GUARANTEE

CALL, WRITE, OR WIRE

DEPT. MB.

NATIONAL RADIO COMPANY

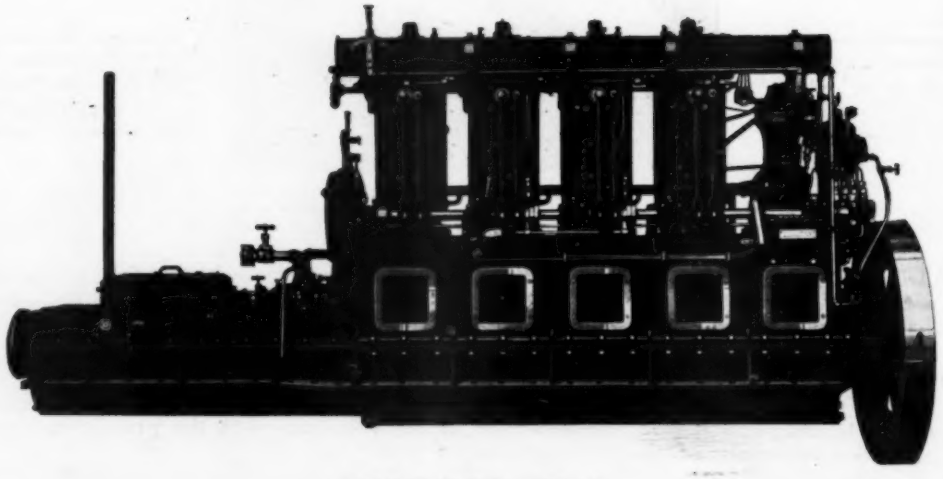
719 Pacific Building Cable address "Natradio," San Francisco **San Francisco, Cal.**

New London Ship & Engine Co

Builders of High Grade Heavy Duty Type

MARINE DIESEL ENGINES

Reliable, Economical
Low Upkeep
Built to Lloyd's Rules



120 B. H. P. Nelseco Diesel

Sizes
120 B. H. P. and up to 3400 I. H. P.

GROTON, CONN., U. S. A.

Advertising Index will be found on page 142

Diesel Engines *Versus* Gasoline Engines

A Typical Example is Given Below in the Case of the Beam Trawler "MARINER"

The 500 D. W. ton Beam Trawler "MARINER"

Mariner has two 240 h.p. Nelseco Diesel engines with a cruising radius of 6000 nautical miles at a speed of approximately 10½ knots. She has a tank capacity of 17,000 gallons of fuel oil which can be purchased the world over. Approximate cost of fuel for 6000 miles is $1700.00.

Had two 240 h.p. gasoline marine engines been installed in the Mariner instead of the heavy oil Diesel engines, and a cruising radius of 6000 miles at a speed of 10½ knots per hour been maintained, her fuel capacity would have to be increased to 34,680 gallons, which is only obtainable at gasoline stations.

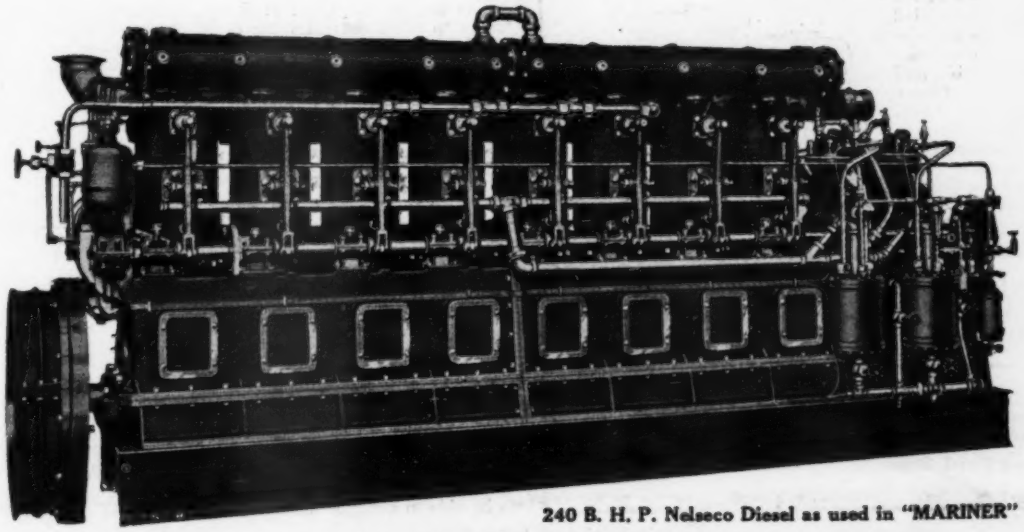
The cost of her fuel for 6000 miles would then be approximately $10,404.00, or between 6 and 7 times as much as the cost of fuel oil.

By a simple subtraction it is easy for the owner of the gasoline propelled vessel to determine the great saving obtained by using the Nelseco fuel oil engine.

Write for Bulletins on Nelseco Diesel Engines

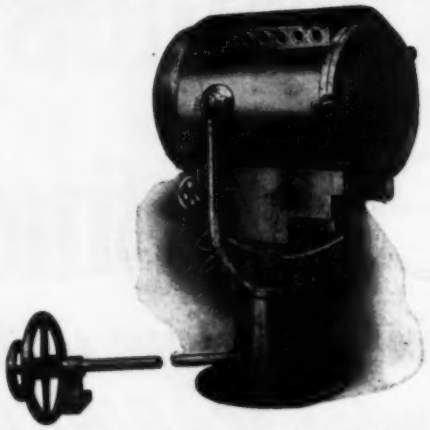
NEW LONDON SHIP & ENGINE CO.

GROTON NSE Co CONN.



240 B. H. P. Nelseco Diesel as used in "MARINER"

CARLISLE & FINCH
ELECTRIC SEARCHLIGHTS



have for years been the choice of careful motor boat and ship owners. Made in all diameters, from 7" to 60". Used on every size craft from motor boat and yacht to battleship and ocean liner.

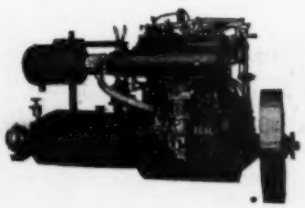
The Carlisle & Finch catalog of searchlights will be mailed to any boat owner, builder and marine architect on request

THE CARLISLE & FINCH COMPANY
261 East Clifton Ave. Cincinnati, Ohio

REGAL

—FOUR CYCLE—
MARINE ENGINES

FOR nineteen years have led the field in the design and construction of reliable and economical power plants. Sizes 2 h.p. to 50 h.p. One to four cylinder. Built to operate with gasoline distillate or kerosene.



REGALITE—the new Electric Lighting Plant, 2 h.p. air cooled motor, ¾ k.w. generator. Write for information.

REGAL GASOLINE ENGINE CO.
74 West Pearl Street COLDWATER, MICH.

Lyndonia, the Newest 230-Foot Yacht

(*Continued from page* 78)

The staterooms or cabins may be described as being influenced by the simple distinguished American Colonial mahogany furniture designed and built in Pennsylvania by the excellent workmen who practiced there about one hundred and twenty-five years ago. The bedsteads are not merely lovely in design, but they yield the comfort of the home bedroom.

In the smoking room we observe a Gothic note, the treatment being in American oak, with inviting leather chairs, and a convenient desk. The ceiling is most interesting and Sloane's has created the effect of an old Tudor plastered ceiling by an ingenious use of material other than plaster which would of course be utterly impractical in a yacht.

The conclusion that we reach in considering the Lyndonia's appointments is that a new note of appropriateness has been struck and held all through, for which the firm of W. & J. Sloane deserve great credit. The old sea dog's cabin was rough, and it lacked comfort, but it had the virtue of fitness; at the other extreme lies the overdone, ultra-luxurious yacht. In Mr. Curtis's Lyndonia has been wrought fitness and comfort, with taste and beauty. It is a delightful success, and should be a potent influence in future designing.

Refrigerating System on Lyndonia

In installing the refrigerating equipment on this yacht the same standard of perfection has been followed as that set for the entire boat.

The complete system, including refrigerators, was designed and manufactured by the Clothel Refrigerating Company, 61 Broadway, N. Y. This is the same system which was employed on the former Lyndonia and which has been so generally adopted for all marine work as well as in the U. S. Naval Service. The machine itself employs Ethyl Chloride as a refrigerant and combines the features of simplicity, safety and silence which are of such vital importance for work of this class. A silent rotary compressor is employed driven by an electric motor with a brine pump and condensing water pump driven through silent gears. The motor, compressor and two pumps are mounted on a common cast iron bed. The brine cooler and condenser are mounted on separate supports, and the whole machine is compact and at the same time accessible.

The machine is of two-ton size, located in the engine room and occupies less space than any other refrigerating machine of the same capacity.

The low pressure at which Ethyl Chloride condenses and the safety of this chemical added to the high efficiency of the plant, make this the ideal system for this class of work.

The refrigerators embody the very latest principles as to design and are built with a view to beauty as well as serviceability.

The hold refrigerator is divided into three compartments; one for vegetables; one for milk, butter and eggs; and one for meat. The compartments are equipped with outside reading thermometers so that it is not necessary to open the doors to ascertain the temperatures. All of these compartments are lined on the side walls and ceiling with white enamel steel and the floors are of white tile with a sanitary base. The exterior of this box is of white enamel, and the entire hardware is of solid brass nickel-plated.

The pantry refrigerator is lined on walls and floor with opalite glass, and the outside wood sheathing is of teak wood with nickel-plated hardware.

The use of teak wood in the manufacture of this box illustrates to what extremes the designers were allowed to go in providing the most beautiful as well as serviceable installation.

In addition to these refrigerators the yacht is equipped with three Scuttle Butts cooled by the refrigerating machine. These Scuttle Butts are so located that they provide cooled drinking water not only for the owner and his guests but for the entire crew as well.

An ice making set of forty (40) pounds capacity is provided for making necessary ice for table use, etc. This set is equipped with 4-10 pound cans which gives an ample supply of table ice and at the same time eliminates the work required in handling the ordinary large size ice can.

In the design of this entire system, the designers of the refrigerating equipment collaborated with the designers of the boat so that the machine and refrigerators are as much an integral part of the yacht as any of its other appurtenances.

Lyndonia Uses Sal-Log

Among the many new devices and instruments with which the yacht Lyndonia is equipped, the Sal-Log finds an important place. The Sal-Log is used in place of the taff-rail log in recording the distance which a vessel travels. It is made in large sizes for big ships as well as smaller sizes for yachts. The Shamrock carried Sal-Log equipment. Lack of space prevents us from giving a complete description of this device in this issue. We hope soon to be able to describe it completely.

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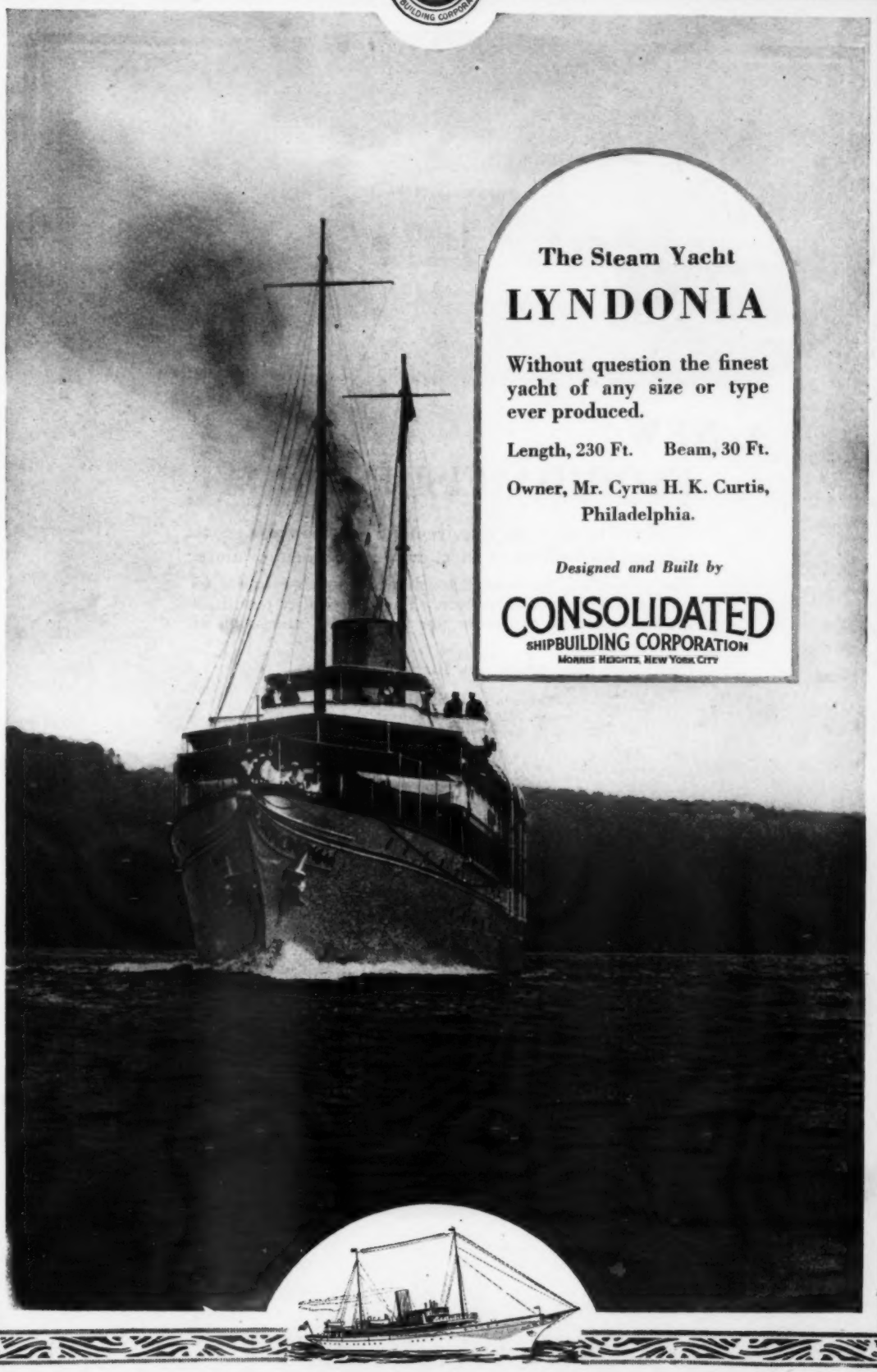


The Steam Yacht

LYNDONIA

Without question the finest yacht of any size or type ever produced.

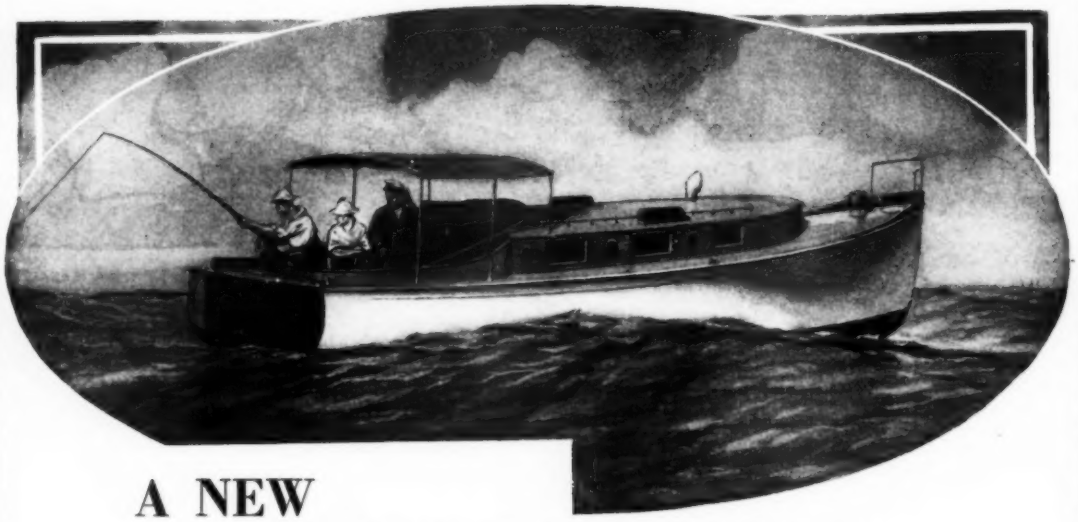
Length, 230 Ft. Beam, 30 Ft.

Owner, Mr. Cyrus H. K. Curtis, Philadelphia.

Designed and Built by

CONSOLIDATED
SHIPBUILDING CORPORATION
MORRIS HEIGHTS, NEW YORK CITY

CONSOLIDATED SHIPBUILDING CORPORATION



A NEW FLORIDA FISHING BOAT

Designed to meet the requirements of those who enjoy fishing, day sailing, or short cruises in Florida waters.

The propelling machinery consists of two six-cylinder 66 horsepower Speedway motors. Their flexibility permits a trolling speed of two miles per hour and a maximum of twenty.

Orders are being taken now for fall delivery.

Blue-prints and full details of this new 1920-21 fishing boat design will be furnished upon request

CONSOLIDATED
SHIPBUILDING CORPORATION
MORRIS HEIGHTS, NEW YORK CITY

Advertising Index will be found on page 142

LONE STAR—Fast Day Cruiser

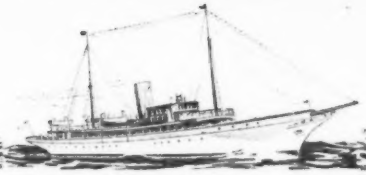
The versatility of Consolidated designers is exemplified in Lone Star. While adhering to the purpose of a fast boat for daytime use it has all the comfort and luxury of a real cruiser. Accommodations for three or four persons make it entirely suitable for short cruises.

This proves to be an ideal combination of desirable features for the service desired by many owners.

Power is supplied by two 200 h. p. Speedway engines, controlled from the bridge.

CONSOLIDATED
SHIPBUILDING CORPORATION
MORRIS HEIGHTS, NEW YORK CITY

LONE STAR
Length 52 ft.
Beam 11 ft.
Draft 2 ft. 9 in.

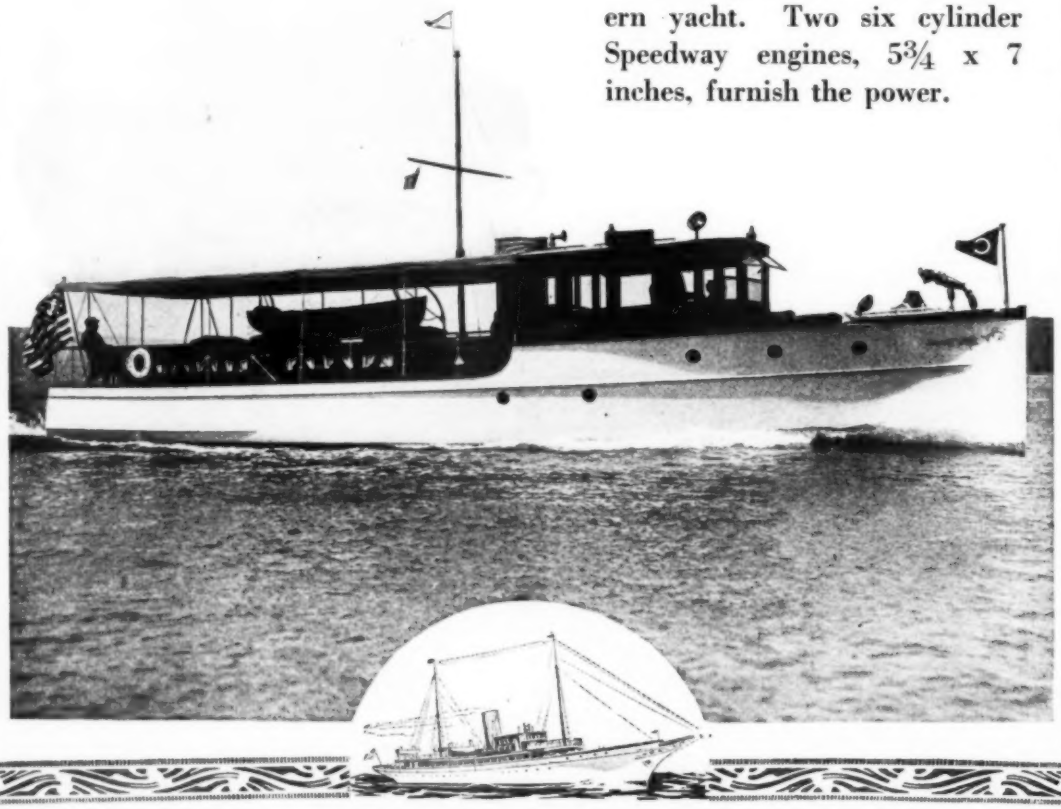


ONE-THIRTY—Express Cruiser

CONSOLIDATED
SHIPBUILDING CORPORATION
MORRIS HEIGHTS, NEW YORK CITY

A LUXURIOUS cruiser of medium size and excellent arrangement is ONE-THIRTY which has just been produced by this organization for Mr. Leon Goodman of Philadelphia. The purpose has not been to crowd the boat with accommodations for a large party but to provide the utmost comfort for the owner.

Within its 60 feet are found all the conveniences of the modern yacht. Two six cylinder Speedway engines, 5¾ x 7 inches, furnish the power.



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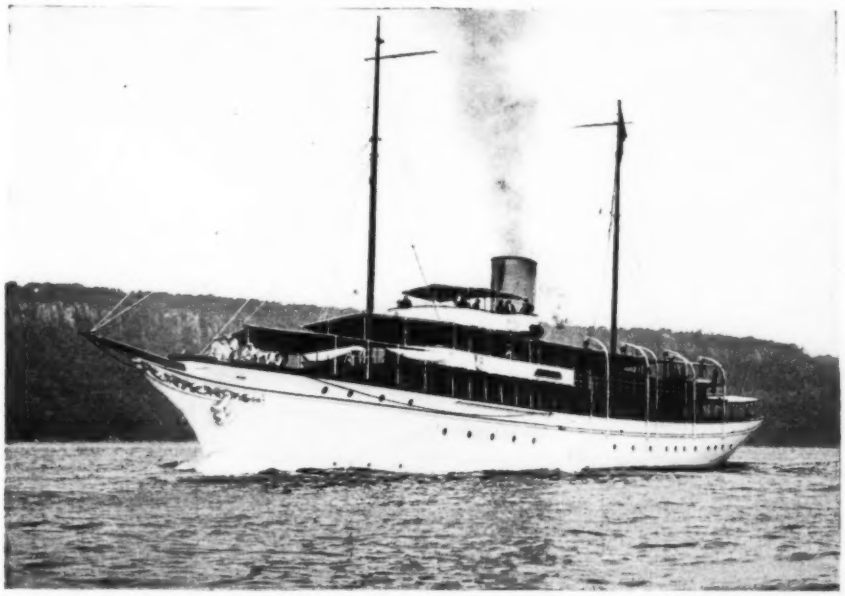


(Photos by Rosenfeld, N. Y.)

Lyndonia ahoy!
She's Valsparred, of course

Here's the *Lyndonia*, a marvel of modern yacht building, owned by Mr. Cyrus H. K. Curtis of *Saturday Evening Post* fame, and built by the Consolidated Shipbuilding Corporation.

Two hundred and thirty feet over all, the *Lyndonia* is the largest and finest private yacht launched since the world war.

Every detail of finish has been carried out to absolute perfection—no expense spared—only the finest of materials used.

Naturally Valspar was the varnish selected—the *Lyndonia* is Valsparred from stem to stern.

Fog, spray, sun, rain and storm—Valspar is proof against them all.

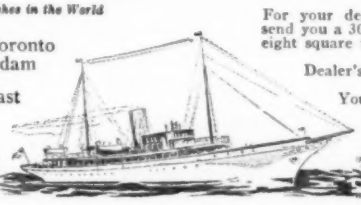
For all marine uses, on all types and sizes of craft—Valspar, the varnish that won't turn white.

VALENTINE'S
VALSPAR
The Varnish That Won't Turn White

VALENTINE & COMPANY
Largest Manufacturers of High-grade Varnishes in the World
—Established 1832

New York Chicago Boston Toronto
London Paris Amsterdam

W. P. FULLER & Co. Pacific Coast



VALENTINE & COMPANY, 456 Fourth Avenue, N. Y.
Special Offer

For your dealer's name and 15c in stamps, we will send you a 30c sample can of Valspar—enough to finish eight square feet of surface. Fill out the Coupon.

Dealer's Name.....

Your Name.....

Your Address.....

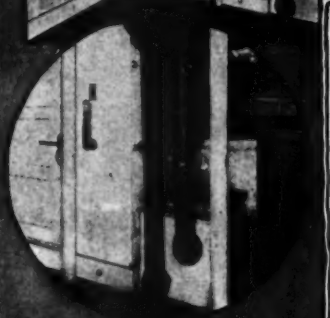
M.B. 9-20

CLOTHEL REFRIGERATING UNIT *on the world's largest yachts*

Lyndonia II

ONE of the largest and the most sumptuously fitted steam yachts in service. Recently constructed by Consolidated Ship Building Company for Cyrus H. Curtis. Equipped with a Clothel Refrigerating System, because of the excellent service the Clothel gave on Lyndonia I. Has food storage capacity for eight months cruising. (1) Meat Room. (2) Section of vegetable room looking into dairy. (3) Exterior. (4) Fish box and the ice maker which produces 200 pounds daily.

CAPTAIN RICH of the "LYNDONIA II"



"CLOTHEL" TRADE MARK SYSTEM

NOWHERE is perfect refrigeration more essential than on sea-going yachts, which are often thousands of miles away from all sources of pure food supply.

When owners of yachts like Lyndonia II, Atlantic, El Fay, and others among the finer boats, are practically unanimous in their choice of the Clothel, what more convincing testimony could one receive when confronted with the question: "What refrigerating system for my boat?"

There are numerous reasons why the Clothel is in high favor among those who demand the best. Full particulars will be sent to you without obligation. Address:

REPRESENTATIVES:

Pacific Coast	Ford & Geirrine	San Francisco
Canada	A. G. Kidston & Co.	Montreal
France	Sautter-Harle Co.	Paris
China	J. P. Sartz	Shanghai
Scandinavia & Finland	Sunde & Company	Christiania

EUROPEAN REPRESENTATIVE:

Capt. Paul Koster . . . . Paris

The Clothel Refrigerating Company
61 Broadway, New York City

Advertising Index will be found on page 142

TOBIN BRONZE

Trade Mark Registered in U. S. Patent Office

By reason of its smoothness, tensile strength, resistance to corrosion and tendency not to foul, TOBIN BRONZE is considered indispensable in the construction of high grade Boats and Yachts. Over thirty years' experience in manufacturing this metal has brought it to a high degree of perfection and demonstrated its value for marine purposes when used in the form of:

Turned and straightened shafting for Motor Boats and Yachts. Sheets for Yacht Plates, Fin Keels, Center Boards, Rudders, etc. Round and Special Shaped Bars for Studs, Block Pits, Nuts, Rivets, Davits, Deck Bolts and Ship Fastenings. Seamless Tubes for light duty Bearings, Bushings and other Engineering purposes.

The TOBIN BRONZE, SHEET COPPER, BRASS and COPPER PIPE and BRASS STRIP used in the construction of the LYNDONIA was furnished by

THE AMERICAN BRASS COMPANY

Main Offices

WATERBURY, CONN.

Sole makers of TOBIN BRONZE, also manufacturers of:—

BRASS, COPPER and NICKEL SILVER in every variety of SHEET, WIRE, RODS and TUBES. ADMIRALTY MIXTURE CONDENSER TUBES.

For Descriptive Booklet and prices apply to the Ansonia Branch, Ansonia, Connecticut

TOPPING BROTHERS

Established 1885

MARINE HARDWARE
OF EVERY DESCRIPTION

Shipbuilding Supplies — Cabin Hardware — Cargo, Boom and Mast Fittings

PORT LIGHTS, ALL DESIGNS AND SIZES

Calking Irons
Ship Augers
Anchors

Treenail Augers
Brass Bolts
Ship Clamps

Anchor and Sailing Lights
Ship Scrapers
Rowlocks

CLEATS: Cast Iron, Galvanized, Brass

ROPE: Wire, Manila, Tiller

THIMBLES: Wire Rope, Sail, Brass

ANCHORS: Loose Stock, Trawl, Folding

BLOCKS: Mall, Iron, Deck, Yacht

CHAIN
SHACKLES

Mast Hoops
Boat Hooks
Life Preservers

Deck Plates
Rudders

Clinch Rings
Turnbuckles
Quadrants

HARTHAN PROPELLERS

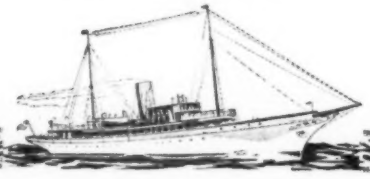
Hawse Pipes
Fenders
Bilge Pumps
Pitch

Chain Hooks
Eye Bolts
Snap Hooks

SHIP CARPENTERS' TOOLS

Bow Chocks
Stern Chocks
Boat Nails
Marine Engines
and Equipment

122 Chambers Street
New York City



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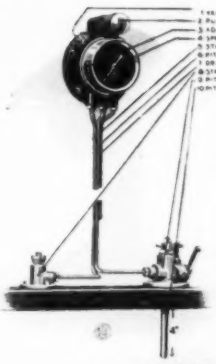
CONSOLIDATED SHIPBUILDING CORPORATION

SAL SPEEDOMETER for MOTOR AND SAIL YACHTS



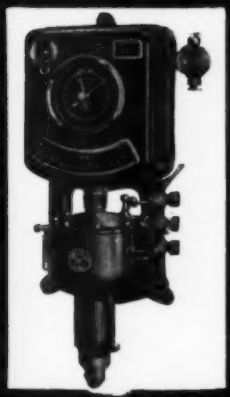
ACCURATE, DEPENDABLE, EASY TO OPERATE

Motorboats:
Controls Economical Fuel Consumption

Sailboats:
Guides Trim of Sails

The SAL SPEEDOMETER is the ONLY KNOWN DEVICE FOR DETERMINING THE EXACT SPEED OF ANY BOAT

SAL LOG for YACHTS COMMERCIAL and WAR SHIPS



Indicates every moment the actual speed in knots, also records distance covered.

Speed indicators and distance recorders can be located on the bridge, the chart room wherever desired.

On the most modern motorships like "Bullaren," on liners like "Stavangerfjord," on yachts like "Lyndonia" on men-of-war, etc., the Sal-log has been found indispensable.

Write for information.

American Representative:

HAMILTON & HANSELL, Inc.
13 Park Row New York City

13 Park Row
New York City

The Dining Saloon of the S. Y. LYNDONIA, designed and built for Mr. Cyrus H. K. Curtis. From a sketch which conveys an idea of the beautiful Interior Decorations and Furniture which were specially created for this yacht by W. and J. Sloane

SUPREMACY *and* SPECIALIZATION STILL SAIL THE SEAS TOGETHER!

IT would have been a great mistake for Mr. Curtis to ask us to build him a yacht. Almost as great a mistake as to ask a builder of yachts to design and furnish the interiors. A great builder put beauty into the lines of the Lyndonia and "the thrill of life along her keel." And Sloane's set afloat on the waters their specialized knowledge of interiors. The Dining Saloon of the Lyndonia, shown above, as well as the other interiors created by Sloane's, is a striking example of the wisdom of calling upon those who are expert in their calling!

W. & J. SLOANE

FIFTH AVENUE AND 47th STREET NEW YORK CITY

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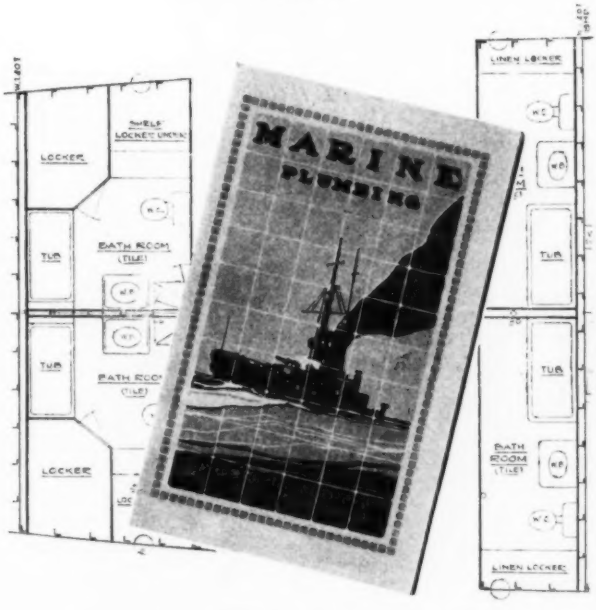
Plan showing arrangement of bathrooms on Lyndonia.



Plan showing arrangement of bathrooms on Lyndonia.

Lyndonia is Fitted Throughout with Mott Plumbing

THE leadership of Mott Plumbing in the marine field has once more been recognized by its complete installation throughout the most perfect pleasure craft in American waters, the "Lyndonia", owned by Cyrus H. K. Curtis.

The equipment of this palatial yacht has been described by one of the leading marine publications as follows:
"Seven bathrooms connect with owner's and guests' rooms. There is also a bathroom connecting with the captain's room on the bridge deck, a bath and shower in the officers' quarters, a bath and shower in the orlop deck crew's quarters, and the usual toilets in many parts of the ship. All plumbing fixtures were furnished by the J. L. Mott Iron Works." The tiling of all these rooms was also done by the Mott Tile Department.

The leadership achieved and held for so many years by Mott Marine Plumbing has been due to its thorough practicability, its wide variety and the invariable reliability it has demonstrated wherever used. Mott Marine Plumbing has kept pace in design with the latest development of shipbuilding and marine architecture. Our comprehensive booklet on "Marine Plumbing" will be sent free on request to anyone interested.

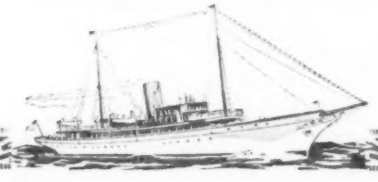
MOTT MARINE PLUMBING

Everything we sell we make

THE J. L. MOTT IRON WORKS

General Offices and Plant, Trenton, N. J.

Fifth Avenue and Seventeenth Street, New York, Philadelphia, Washington, Boston, Chicago, Seattle and all principal cities.



CONSOLIDATED SHIPBUILDING CORPORATION

NEVASPLIT PANELS

Better Than Wood

DINING ROOM, S. S. "MAUI"

61,000 sq. ft. of Nevasplit Paneling, used in the Social Hall and Dining Room ceilings, Corridors, Suite Room ceilings, etc., on the superbly finished new S. S. "Maui" of the Matson Navigation Co.'s fleet.

Used in Many Places On the S. Y.

LYNDONIA

Equally Suitable for Any Boat, Large or Small

THE KEYES PRODUCTS CO.

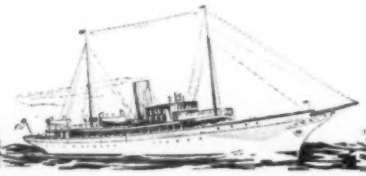
Equitable Building
New York City

Kantack, Heath & Warman, Inc.

A GUILD FOR THE REPRODUCTION OF ANCIENT AND THE DEVELOPMENT OF MODERN ART OBJECTS, CONDUCTIVE TO HARMONY, EXPRESSED THROUGH ILLUMINATION AND ORNAMENTATION FOR INTERIORS AND EXTERIORS

WE SHALL BE GLAD TO COLLABORATE IN THE DESIGN AND INSTALLATION OF LIGHTING FIXTURES ON YACHTS SIMILAR TO THE "LYNDONIA" AND ALSO ON RESIDENTIAL WORK.

Four Eighty-Nine Fifth Avenue, New York



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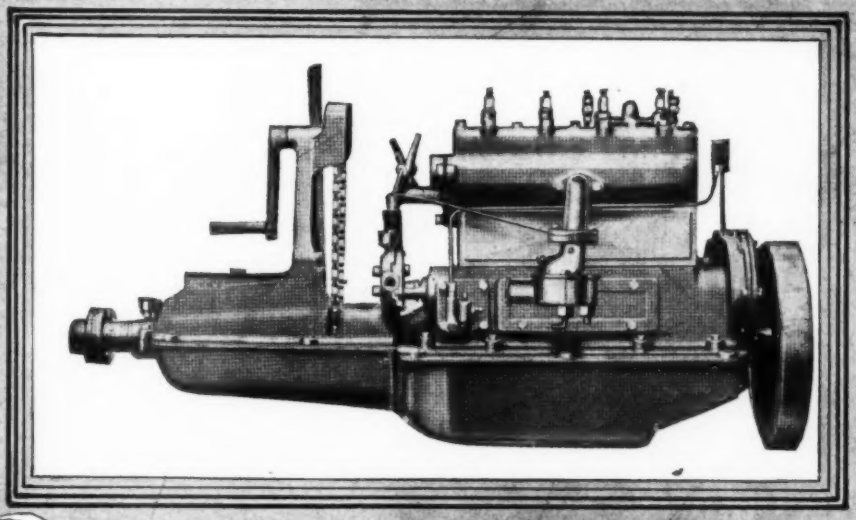


THE WORLD'S STANDARD SMALL MOTOR

Universal

MOTOR

As nearly perfect as it is possible to build a motor, the Universal will bring you pleasure and satisfaction heretofore unknown to motor boatmen.

Let us tell you all about it in our Latest Bulletin No. 29.

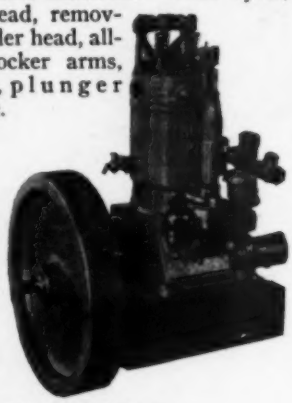
UNIVERSAL MOTOR COMPANY

OSHKOSH WISCONSIN

"LIBERTY KID"

The Best Little Medium-Duty Marine Engine on the Market —with Power to Spare

Liberty Kid is a powerful and dependable little engine for all kinds of small craft. You'll be agreeably surprised at its quality of design, construction and materials. Four cycle, valve-in-head, removable cylinder head, all-bronze, rocker arms, push-rods, plunger pump, etc.



3½ H. P.

Develops 3½ H.P. at 600 R.P.M.
Develops 4 H.P. at 750 R.P.M.
Also built in Double Cylinder Model giving 8 H.P.

Liberty Kid is not an experiment. Over 200 in actual use. Write for catalog and testimonials.

AGENTS AND DEALERS

Get the agency for Liberty Kid if you want to increase your profits the easiest way. Write us.

A. G. HEBGEN, *Manufacturer and Sole Distributor*
440 MARKET STREET SAN FRANCISCO, CAL.

"KNOWN AS THE BEST AND THE BEST KNOWN"

HARDWARE FOR WET PLACES

THE LARGEST STOCK IN U. S. A.

PORTLIGHTS
SHIP TELEGRAPHS
DECK PLATES STEERERS
VENTILATORS
LOGS CLEATS, Etc.

A COMPLETE FLAG DEPARTMENT

CHAS. D. DURKEE & CO. INC.
TRADE MARK MANUFACTURERS OF MARINE HARDWARE

FOR EVERY KIND OF CRAFT AFLOAT

2 SOUTH STREET, NEW YORK CITY
FACTORIES: STATEN ISLAND, N. Y. CITY

1090-page Catalog will be sent anywhere on payment of 25 cents to cover cost of delivery.

Tornado, a Hand 45-Foot Auxiliary Schooner

(*Continued from page 56*)

stalled complete and ready for service. The exhaust will be piped with suitable galvanized pipe and fittings. All details to be in accordance with the best standard practice.

Plumbing

Water Tank: There will be a strongly made 24-ounce tin-lined copper water tank to template, properly fitted where indicated. This tank will hold about 100 gallons and will be built with swash plates, filling plate and connected to galley sink pump and lavatory as required.

Fuel Tanks: Where indicated, there will be a pair of 28-ounce copper fuel tanks with suitable swash plates, filling plates and outlet bushing, carefully tested and proven tight, properly set and connected as required.

Toilet-Room Plumbing: In toilet room there will be water closet with mahogany seat and cover, properly installed for service, with supply and discharge sea-cocks, as supplied by closet makers, also a corner lavatory with pump, completely installed ready for service.

Sink: In galley there will be an enameled iron sink, 12x15 inches, properly set and connected with suitable drain pipe discharging overboard below painted L.W.L. There will be a brass pump properly connected to fill sink from water tank. All connections of suitable brass pipe.

Scuppers: There will be 1½-inch lead scupper pipes properly fitted in four corners of cockpit to drain overboard. They will be properly fitted with regulation leather scupper valves outside.

Bilge Pump: There will be a closed-head copper bilge pump, No. 1, properly installed in deck between trunks, connected to lowest point in bilge with suitable lead pipe with strainer, discharge led directly overboard.

Cabin Joinerwork

Ceiling: The hull will be ceiled from station No. 1 to station No. 11, from flooring to under side of upper bilge clamp, with ⅞x2½-inch white pine with beveled edges. Space to be left under clamp for circulation of air.

Flooring; The flooring will be of ⅞x3-inch rift-sawed Georgia pine on suitable floor bridges. In forecastle, galley, main cabin and motor room flooring to be placed. There will be removable sections to allow of getting at bilge.

Forecastle: The finish will be pine, painted as required. There will be transom seats as shown, with pipe berths over same. Forward, there will be a shelf as indicated. There will be a closet on starboard side aft.

Main Cabin: To be arranged as indicated with transom with drawers under and folding berth over on both starboard and port side. There will be a buffet with drawers on starboard side forward and a hanging closet on port side as indicated. To be finished in white pine painted white with small trim of mahogany.

Toilet Room: On starboard side, where shown, there will be a toilet room arranged with lavatory, water closet, shelves, and locker, as indicated. The finish will be white pine painted white. There will be a door in aft end of this compartment to allow access to engine room.

Galley: To be arranged as indicated, with ice chest back of main companionway steps. To have dresser with sink and lockers under on port side with stove platform under deck between dresser and ice chest. The finish will be white pine painted white.

Engine Room: The general finish will be in white pine painted as required. There will be a pair of transom seats as shown, with pipe berths over and closets in forward end as indicated.

Joinerwork, In General: All stock will be in approved weights and all details will be neat, complete and as required. All indicated columns will be of turned mahogany, quartered or rabbeted on as shown. All door casings and small trim to be of mahogany. All bulkheads, doors and partitions will be in white pine with neat flat panels as shown. All doors to be hung on suitable brass butts fitted with approved brass knobs and catches. All drawers to be fitted with brass drawer pulls and catches for holding closed. There will be all brass clothes hooks in closets as required. The cabin and engine-room steps to be of mahogany with rubber-covered treads, brass nosings and brass hooks for holding in place.

Spars

Indicated masts, booms, gaffs and forestaysail-club are to be of selected spruce sticks, properly made and neatly finished as indicated by sail plan drawing. There will be mahogany trucks on masthead poles as shown, fitted with suitable sheaves for flag halliards. There will be suitable oak spreaders 2 feet 2 inches on foremast and 2 feet 4 inches on mainmast, length given from side of mast to outboard end. Gaffs will be fitted with approved jaws of white oak, neatly curved as shown. All spar work will be complete.

Standing Rigging

The standing rigging will be of the best quality galvanized steel wire rope. There will be two shrouds on each side of both masts, forestay, and jibstay, with neatly turned served eye splices over masts as indicated. Splices will be of proper size to allow of rigging being hauled down properly without short bends. The forestay will shackle to double galvanized strap over bowsprit. The springstay will shackle to mast head bands. The indicated bridles and pendants will be of flexible steel wire rope with neatly served splices. The shrouds will be set up with bronze turnbuckles, and there will be ¼-inch diameter galvanized sheer poles where indicated.

Blocks

There will be approved galvanized iron strapped ash shell composition roller bushed blocks as required by sail plan. On mainmast all blocks will be 5-inch size, and on foremast all blocks will be 4½-inch size. All bridle blocks will be fitted with bridle attachments, jib halliard blocks with Coleman hook, and all other blocks will be fitted with shackles. Block shells to be varnished.

Running Rigging

The running rigging will be of the best quality four-strand manila cordage in sizes required by plan. To be complete in every respect as required for service. All splices to be neatly turned, ends whipped and lengths to be sufficient to properly handle all parts.

Sails

There will be mainsail, foresail, forestaysail, and jib of approved cotton duck, made by approved sail makers, in accordance with standard practice. All sails to be cross cut with indicated reefs. Mainsail, foresail, and both jibs to be of No. 9 duck. The head of foresail and head of mainsail will be laced around gaffs and the foots on booms will be laced to same with wire lace lines through lacing eyes. There will be 12-ounce khaki duck covers for all sails. There will be 9-inch diameter white oak mast hoops as required.

(*Continued on page 102*)

Advertising Index will be found on page 142

SINCLAIR OILS WIN AGAIN

BRITISH INTERNATIONAL TROPHY MOTOR BOAT RACE

Cablegram

Cowes, England, August 11, 1920

Sinclair Refining Company
Sheldon Clark
Vice President

Miss America won the British International Trophy in straight heats. Perfect performance using SINCLAIR OILS.

(Signed) Gar Wood

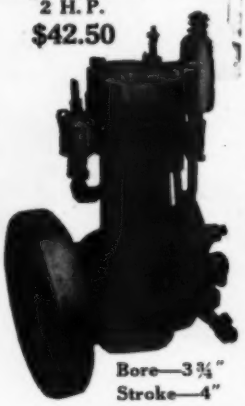
SINCLAIR REFINING COMPANY
CHICAGO

DUNN

DUNN FOUR CYCLE MARINE MOTORS

1920 Models—Kerosene or Gasoline Fuel

Single Cylinder
2 H. P.
$42.50



Bore—3¾"
Stroke—4"

Our Prices Speak for Themselves

If you want a reliable economical motor at the lowest possible cost you should own a Dunn Motor. Compare the prices of Dunn Motors quoted on this page with the prices of any other motors in the market. Then write us for full information about the design features of Dunn Motors and how they are built.

Remember all Dunn models are four cycle type, of up-to-date design. Special attention has been given to easy starting and accessibility for easy repair and replacement.

6 H. P. $100.00 **12 H. P. $150.00**

3 Cyl. 6 H. P. and
3 Cyl. 12 H. P.

6 H. P.	12 H. P.
Bore—3¾"	Bore—4¼"
Stroke—4"	Stroke—5"

What A Dunn User Writes

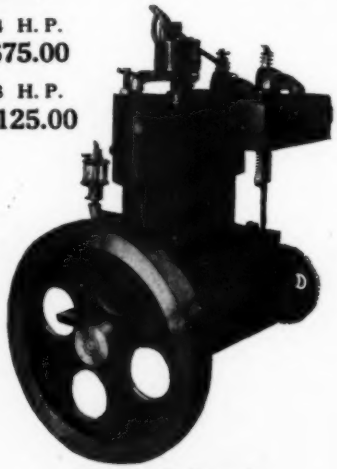
"This is to certify that about 10 months ago, I purchased one 12 H.P. Dunn Motor which I had installed in my cabin cruiser, 33½ ft. long by 9 ft. beam, full model boat, and I use this boat in outing trips and have made as high as 200 miles without a stop. It works beautifully, and my little boy, 13 years old, can and does start motor without any trouble. This motor runs smooth and easy, in fact, is as smooth running as any automobile I have ever used. I consider it the best marine engine made." (Signed) Dr. G. H. Howard.

At the prices given, each motor is furnished complete with suitable propeller, shaft, couplings, coil, spark-plugs, mixing-valve and oil-cups.

Customers abroad—Add 10% to prices given to cover cost of boxing thoroughly for export and delivering F. O. B. Steamer New York City.

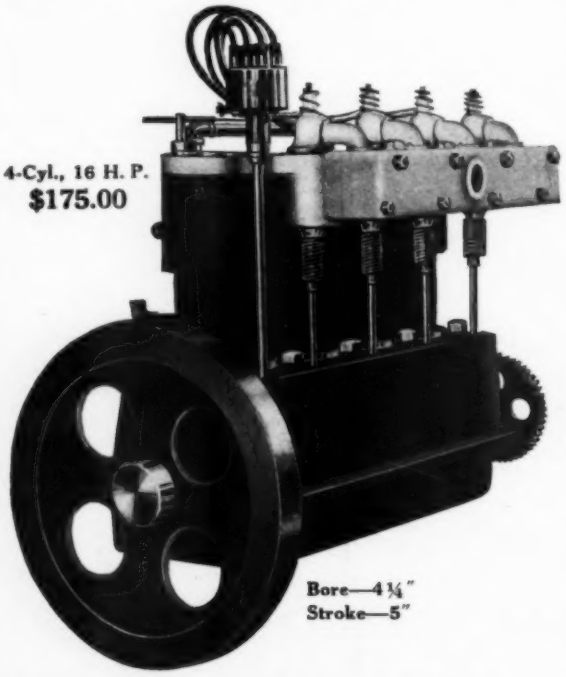
Write today for our new 1920 catalog

4 H. P. $75.00
8 H. P. $125.00

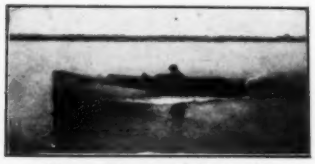


2 Cyl. 4 H. P. and
2 Cyl. 8 H. P.
4 H. P. Bore—3¾"—Stroke 4"
8 H. P. Bore—4¼"—Stroke 5"

4-Cyl., 16 H. P.
$175.00



Bore—4¼"
Stroke—5"

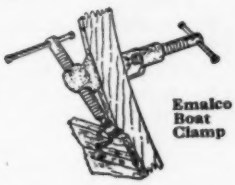


Dunn Powered Launch

DUNN MOTOR WORKS, Ogdensburg, New York, U. S. A.

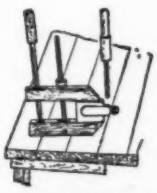
Advertising Index will be found on page 142

EMALCO MARINE HARDWARE

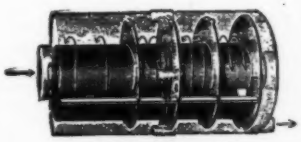


Emalco Boat Clamp

New England Headquarters for Motor Boat Supplies



Emalco Universal Clamp



Maxim Silencer

Anchors
Batteries
Bearings
Bells
Bilge Bailers
Binnacle Lamps
Blocks
Boat Hooks
Boat Scrapers
Bolts
Calking Irons
Carburetors
Chain
Clamps
Clocks
Code Signals
Coils
Compasses
Cushions
Electric Lights
Fenders
Flags
Fog Horns
Gauges
Hooks
Horns
Lamps
Lighting Outfits
Locks
Magnetos
Mufflers
Nails
Nuts
Padlocks
Paint Brushes
Paint
Piston Rings
Polish
Port Lights
Propellers
Pulleys
Pumps
Rope
Screws
Sea Cocks
Seam Composition
Search Lights
Shackles
Shafting
Signals
Socket Wrenches
Spark Plugs
Speed Indicators
Sponges
Steering Wheels
Stoves
Strainers
Switches
Tanks
Tiller Rope
Torches
Varnish
Washers
Wheel Pullers
Whistles
Windlasses
Wrenches

and everything else for your boat.

Write today for EMALCO Catalog if you want the best hardware at the most reasonable price. Export orders promptly attended to.

MALONE HARDWARE COMPANY

"WHERE THAT DOLLAR STRETCHES"

378 Atlantic Ave. Near Rowe's Wharf BOSTON, MASS.

Motor Boatmen's Charts and Log Sheets Published by Motor Boating

Charts printed on heavy cardboard 8½" x 11" and punched to fit standard loose leaf folder.

Contain name and location of all principal ports and harbors, distances, compass courses and directions. Invaluable for use on small boats and motor yachts. The set now includes the following charts:

SERIES A

No. 1—Western End of Long Island Sound
No. 2—Eastern End of Long Island Sound
No. 3—Block Island Sound
No. 4—New York Harbor
No. 5—Boston Harbor
No. 6—Buzzards Bay
No. 7—Block Island to Vineyard Sound, including Narragansett Bay
No. 8—Delaware Bay
No. 9—Chesapeake Bay, Part I, Upper Part
No. 10—Coast of Maine, Portland to Rockland
No. 11—Hudson River, Kingston to Albany
No. 12—Chesapeake Bay, Part II, Central Part

SERIES B

Series B Charts Nos. 13 to 24 are in the course of preparation, and will be forwarded as ready. Series B is as follows:

No. 13—Lake Erie—Eastern Part
No. 14—Lake Erie—Western Part
No. 15—Hudson River, New York to Kingston
No. 16—Lake Champlain
No. 17—Erie Barge Canal
No. 18 — Massachusetts Coast
No. 19—New England—Newburyport to Portland
No. 20—Cape Cod Bay
No. 21—Maine, Monhegan to Eastport
No. 22—Chesapeake Bay, Part III, Lower Part
No. 23 — St. Lawrence River and Thousand Islands
No. 24—Biscayne Bay

MoToR BoatinG has also published a log sheet to fit the standard 8½" x 11" loose leaf folder. Each sheet contains spaces for such data as time of passing various aids to navigation, names of aids, magnetic and compass courses, distances, patent log readings, speed of boat, revolutions of motor, wind direction and force, condition of weather and sea, depths of water, fuel, time of high and low water, etc., etc.

PRICES

Charts 25 cents each or $1.50 per set of 12 (Series B will be sent as published).
Log sheets $1.00 per set of 50 sheets.
Loose leaf binders (canvas bound) to hold charts and log sheets, $1.75.

MOTOR BOATING
119 West 40th St. New York City

Tornado, a Hand 45-Foot Auxiliary Schooner

(*Continued from page 98*)

Miscellaneous

Limbers: There will be suitable limber holes under frames and floors in ends and as required, to allow bilge water to flow to pump well.

Boom Crotches: There will be white oak boom crotches of scissors type to hold fore and main booms in approximate position indicated by sail plan when sails are furled. These will have brass hooks on feet to engage eyes on deck. There will be brass plates on decks and on booms to prevent chafing.

Side Steps: The builder will provide suitable side steps of mahogany, with brass rail hooks and rubber treads.

Cement: There will be cement mixed with about 3,000 pounds of boiler punchings run into hull as required by construction plan, flush with tops of floor timbers amidships.

Ballast: The builder will supply and properly stow about 1,500 pounds of lead trimming ballast in small pigs.

Painting and Varnishing

The entire interior of hull, below decks, where not exposed, will be given two coats of red lead and oil before being ceiled. The bottom, outside, below painted waterline, as indicated by sail plan, will be given one coat of red lead and two coats of light green non-fouling bottom paint. The topsides will be finished in yacht white with number of coats sufficient to give a satisfactory surface. The decks, pit flooring and staving, also rail caps, trunk tops, seats, bitts and all other exposed woodwork, except trunk and curb sides, will be painted with three coats of light tan color deck paint. The trunk sides and pit curb are to be finished like topsides. The spars will be finished in three coats of the best spar varnish. All pine and oak below decks, including inner sides of trunks, beams, frames and planking, will be finished satisfactorily in enameled white, with all mahogany interior woodwork finished in varnish. The name and port will be neatly carved on stern in 3½-inch letters, properly gilded in gold leaf.

Caulking and Paying

All seams in planking, decking and in pit flooring will be properly caulked with cotton, run with paint and payed with white lead putty.

Equipment

The builder will supply and properly fit the following equipment items:

4 Complete pipe berths, rigged for service where indicated, each with approved mattress pad.
1 Shipmate stove No. 2.
1 Pair of spring cushions for folding berths.
1 Pair of approved cushions for cabin transoms.
6 Jacket life preservers.
2 Pyrene fire extinguishers with bracket.
1 Set regulation oil-burning galvanized iron running lights, with light boards as required.
1 Each, fog horn, canvas bucket, deck swab, brass bell.
2 Copies of United States Pilot Rules.
2 Cylindrical Cork fenders, 24x6 inches, with lanyards.
4 Dock lines, each 7-fathom 2-inch line, with whipped ends.
1 Galvanized iron kedge anchor, 45 pounds.
1 Galvanized iron kedge anchor, 85 pounds.
1 Manila cable, 35 fathoms three-strand 3-inch.
1 Manila cable, 40 fathoms three-strand 3½-inch.
1 Set of anchor chocks to carry service anchor forward, as required.

Yard & Shop

(*Continued from page 60*)

Announcement to Yacht Owners

The Yacht Brokers' Association of New York and vicinity, established in the business of selling and chartering yachts, have found it necessary to increase the brokerage rate on the sale of yachts in order to maintain efficient service.

On and after September 1, 1920, the brokerage rate on the selling price of yachts shall be Seven (7%) Per Cent. The commission on charters will not be increased, remaining at Ten (10%) Per Cent, as heretofore.

John G. Alden, Consolidated Shipbuilding Corp. (Yacht Brokerage Dept.), Cox & Stevens, Edward P. Farley Co., Simon Fisch, William Gardner & Co., Henry J. Gielow, Hollis Burgess Yacht Agency, H. H. Jennings Co., Frank Bowne Jones, S. L. Kingsley & Co., C. D. Mower, Linton Rigg Yacht Agency, Harry W. Sanford, Seabury & De Zafra, Strong & Beekman, Tams, Lemoine & Crane.

Miss America Used Sinclair Oils

A cable received by the Sinclair Consolidated Oil Corporation from Garfield A. Wood of Detroit, owner of the motor boat Miss America, which won the Harmsworth trophy off Cowes, England, says, "Miss America won the British International Trophy in straight heats, perfect performance using Sinclair Oils." All three of the American entries, the Miss America and the Detroit V, entered by Mr. Wood, and the Whip-po'-will, Jr., entered by Commodore Judson, carried with them a full supply of Sinclair products. Sinclair oils have been used by the winners in all the important automobile and motor boat races this year.

Advertising Index will be found on page 142

KERMATH

What Kermath's Foreign Supremacy Means to Every Boat Owner

THERE is a deep significance to every motor boat owner in America, in the fact that Kermath engines hold a greater proportion of the export trade in the marine engine field than any other competitor.

The reasons, of course, are Kermath's consistent good performance, its frequency of repair and adjustment, and its remarkable fuel economy—a highly important factor in countries where gasoline costs three to four times as much as it does in America.

But the chief and fundamental reason for this predominant foreign preference for Kermath lies in the fact that it is the one marine engine that has been strictly standardized since 1912.

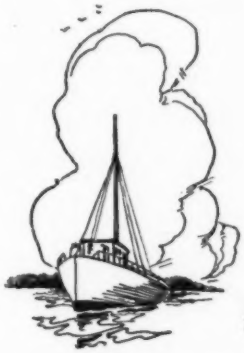
It means that every Kermath part that leaves the factory today can be accurately fitted to any Kermath engine that we have ever built, whether it's a 1912 or a 1920 model.

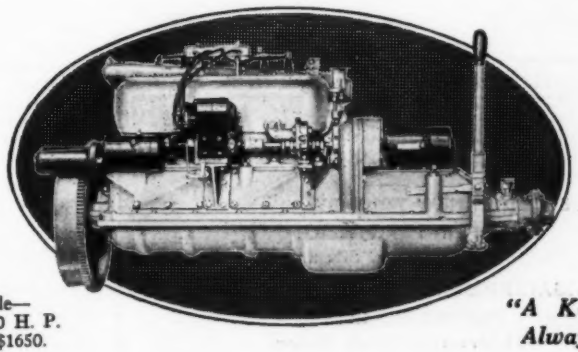
You can imagine how this advantage is appreciated by dealers and consumers who live five or ten thousand miles from the base of supplies.

Kermath standard policy makes it easier and less expensive for the Kermath dealer to keep a complete stock and to serve his customer more promptly than any other dealer.

It assures the Kermath owner the kind of service he wants when he wants it, whether he be in Wisconsin or Singapore.

Write for the Kermath booklet—it will interest you immensely whether you own a boat now or consider buying one. Address Dept. D.





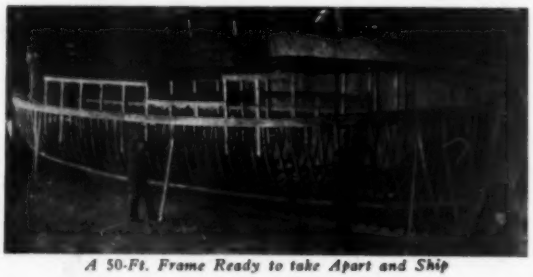
4 cyl. 4-cycle—
12, 16, 20 and 40 H. P.
Prices $450 to $1650.

"A Kermath Always Runs"

KERMATH M'f'g Co.

DETROIT MICHIGAN.

DEFOE KNOCK-DOWN BOATS



A 50-Ft. Frame Ready to take Apart and Ship

Pleasure and Commercial Types

Over sixty standard designs, with variations in length of hull and arrangement of interior. Send for catalog.

Special quotations on NEW Designs to your specifications.

Your distance from boat building centers need not prevent your getting a boat exactly to fill your needs.

Mail us direct full statement of your requirements and see what we may have to offer. No foreign agents except in England—the K. D. Boat & Engine Co., Scarborough.

DEFOE BOAT & MOTOR WORKS

3228 State St., Bay City, Mich., U. S. A.

A 65-Ft. Defoe Cruiser Complete

BARKER MOTORS

Leaders in 2-cycle class for twenty years and still supreme in

Dependability Durability
Simplicity Serviceability

"Imitated but Not Equalled"

Moderate Price
Conservative Ratings

DISTRIBUTED IN NEW YORK BY:
TOPPING BROTHERS,
122 Chambers Street.

IN MASSACHUSETTS BY:
TOPPAN COMPANY,
101 Haverhill Street, Boston.

Made by

THE BARKER FACTORY
NORWALK CONNECTICUT

Write for Barker "Red Letter Book" of Motors

Why Neglect Our Inland Waterways?

(*Continued from page* 26)

and water lines were purchased and gradually withdrawn. An interchange of traffic with water carriers was discouraged. This policy continued for many years with the knowledge of a complacent and inert public, with the result that traffic actually declined on many of our interior rivers. This condition was ascribed to the inferior facilities offered by water carriers and others said they could not compete with the railroads. It is said we can give credit to a falsehood if we repeat it sufficiently often, and in the case of the waterways there are many Americans who still believe that our rivers cannot be profitably utilized for transportation. The fact that they are profitably utilized in some of the most progressive countries, and even in some sections of our own country, does not in every case remove this deeply rooted fallacy. It may be said that our highways were likewise neglected. While the United States occupied a segment of a great continent, the physical conditions of which peculiarly demanded both trunk line and local highways, notoriously we had the worst highways of any of the great nations. Our bold and astute railroad managers continued to tell us that the railroads were sufficient or could be made sufficient for all the needs of transportation and the American people amiably accepted this propaganda as an economic truth and neglected both their waterways and highways.

With the last two decades this economic bubble has burst. During several periods of national prosperity it was discovered that the railroads were physically unable to move the products of the country and serious congestion of traffic followed. The recent war greatly accentuated this condition. There has resulted a genuine renaissance in both our highways and waterways. The Federal road law, which offered a basis of financial co-operation between the Federal Government and the States, was a recognition of this change. Many millions of dollars are now annually expended for improved highways, both for local and through traffic, and the outlook is for even larger expenditures. The automobile and the motor truck have emphasized the necessity for hard and durable roads.

The waterways are also coming into their own. Interior rivers and harbors are being intelligently improved. Canals, where needed, are being constructed, and very generally the American people are coming to understand that transportation by water forms an essential and integral part of our transportation system.

I will now discuss briefly some of the conditions which must exist if water transportation is to be appropriately developed and dedicated to the public service. What I have to say will concern our coastwise and interior commerce, and particularly the latter.

Co-ordination

We must keep constantly in mind the proposition that water carriers must be co-ordinated with rail carriers and with the highways. Each is essential to the complete use of the others. In this connection it is well to recall the habit of some to disparage the volume of traffic carried on our interior waterways, but they are unfamiliar with the facts. Perhaps the latest estimate of our water-borne commerce is contained in a letter from the Chief of Engineers, U. S. Army, to the Committee on Commerce of the Senate, dated December 29, 1914, in which he estimates a total of 772,885,400 tons of water-borne commerce in the United States. After making every possible deduction arising out of duplication or otherwise, he arrived at the conclusion that there were at least 259,000,000 tons carried at that time upon our waterways. It is quite probable that this represents the minimum at that date and the total is very much larger at this time. However, the volume now carried by water is very much less than could be carried and certainly less than would seek our waterways if conditions were favorable. Referring to the necessity of co-ordination, it may be said that there should be a free interchange of traffic between the water carriers and the rail carriers. The reason for this is obvious. Admittedly we have a great railroad system, both as to the stability of its tracks, equipment and service, but this could not have been effected except by a complete interchange of traffic between the different lines of railroads. By standardization of tracks and rolling stock and by pro-rating of traffic rates, both freight and passenger cars are carried over the lines of two or more railroads from point of origin to destination without change of cars or breaking of bulk. It is entirely feasible to establish such prorating of traffic between the waterways and the railways where such traffic may be carried partly by water and partly by rail from the shipper to the consignee. Every intelligent person will concede that the heavier and more bulky products can be moved more cheaply by water and with the same or greater expedition. The average time of movement by rail through the country effectually disposes of the criticism that movement by water consumes greater time.

(*Continued on page* 112)

Advertising Index will be found on page 142

The KEY-MODEL Will Replace Them All

TRADE Coes MARK Wrenches

Put a Key-Model in the engine-room, and watch it make friends.

And watch it work. It won't slip and scar a nut or a valve or union. It will always fit.

Four sizes, 28" 36" 48" 72" in length
Opening, 5¼" 6¼" 9½" 12¼"

Made of steel forging thruout, and backed by the Coes' reputation for workmanship.

Our suggestion is:

Try One

Your dealer will supply you.

COES WRENCH CO.

Worcester :: :: :: :: :: :: :: :: Mass., U. S. A.

Let LAWRENCE PUT LIFE IN THAT OLD MOTOR

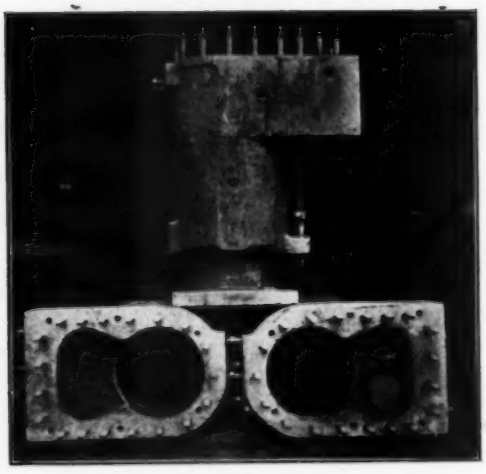
IT'S a shame to scrap a cylinder which has been scored so deep that it won't hold compression. But it's still more of a shame to try to keep such a cylinder in service, with gasoline at the prices prevailing today. There is only one practical and economical solution—let us repair it by the

Lawrence Patent Process

Our expert workmen electrically fuse a silver nickel alloy into the defects or scores. The bore is not enlarged—the same piston rings fit as perfectly as ever. The Lawrence Process positively cannot warp or harm the cylinders in any way and our work is *guaranteed for the life of the motor.*

Write us today for quotations, telling size of score or defect or ship your cylinders to our nearest plant at once.

Licenses under Lawrence Patent are available.



We are equipped to handle and repair by the Lawrence Patent Process any size cylinder, from the smallest auto or marine motor, to the biggest stationary engine. No matter what the size, our repair gives you a cylinder as good as new at a fraction of the cost of replacement.

L. LAWRENCE & COMPANY

ESTABLISHED 1862

292 Halsey Street **Newark, New Jersey**

Licensees office: 2020 Woolworth Building, New York

LAWRENCE SERVICE PLANTS:

Buffalo—10 Summer St.
Chicago—1522 Michigan Ave.
Cleveland—6529 Euclid Ave.
Detroit—85 Maldrum Ave.
Los Angeles—1030 S. Grand Ave.
Milwaukee—18 Martin St.
Minneapolis—14 N. 9th St.
Newark—292 Halsey St.
New York City—353 W. 57th St.
Philadelphia—1601 Summer St.
Pittsburgh—5102 Baum Blvd.
San Francisco—116 Hyde St.

Few territories still open.
Inquire at Woolworth Building, License Office.

Advertising Index will be found on page 142

"THE MOTOR THAT CROSSED THE ATLANTIC"

DE KAMEEL
is sinds eeuwen het schip der woestijn
door zijn uithoudingsvermogen, rustigen gang en
matig voedselgebruik
SCRIPPS
SCHEEPSMOTOR
is de beweegkracht voor het moderne verkeer, door zijn bedrijfszekerheid, eenvoudige bediening, rustigen en snellen gang, zuinig brandstof- en smeeroliëverbruik

A Scripps Advertisement from the Dutch East Indies

Freely translated—

"For centuries the camel has been the ship of the desert because of his endurance, his quiet running and moderate food consumption.

Scripps

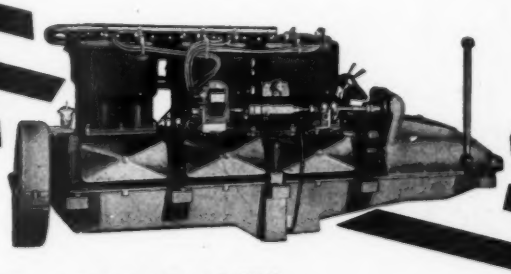
MARINE MOTOR

is the motive power for modern water traffic, because of its stability, easy operation, quiet running and minimum use of fuel and lubricating oil."

In the camel we believe our Dutch friends have an excellent comparison for the Scripps Motor. Both are famed throughout the world for their dependability and their moderation in fuel consumption.

No matter in what part of the world you are located, you will find the Scripps Motor an ideal power plant for any boat requiring a medium duty or high speed motor from 10 H.P. to 75 H.P.

Two, four and six cylinder models



Write today for latest catalog

SCRIPPS MOTOR COMPANY

631 Lincoln Ave., Detroit Mich., U. S. A.

Hacker-Craft

Runabouts Exclusively

Plan Now for Next Summer

YOU who have "put off" building your boat until you find it too late to build for this season's use—

NOW, get into communication with

HACKER BOAT CO.

and determine what you want for next year.

WE have a complete stock of Hacker Designs covering any type of boat you may need.

The plans are sold at a price commensurate with their efficiency and pleasure giving qualities.

Build your own boat for next year

using a

HACKER DESIGN

START NOW so as to allow plenty of time for an early launching in 1921.

Complete plans, working drawings and instruction sheet in every instance. Get our descriptive folders.

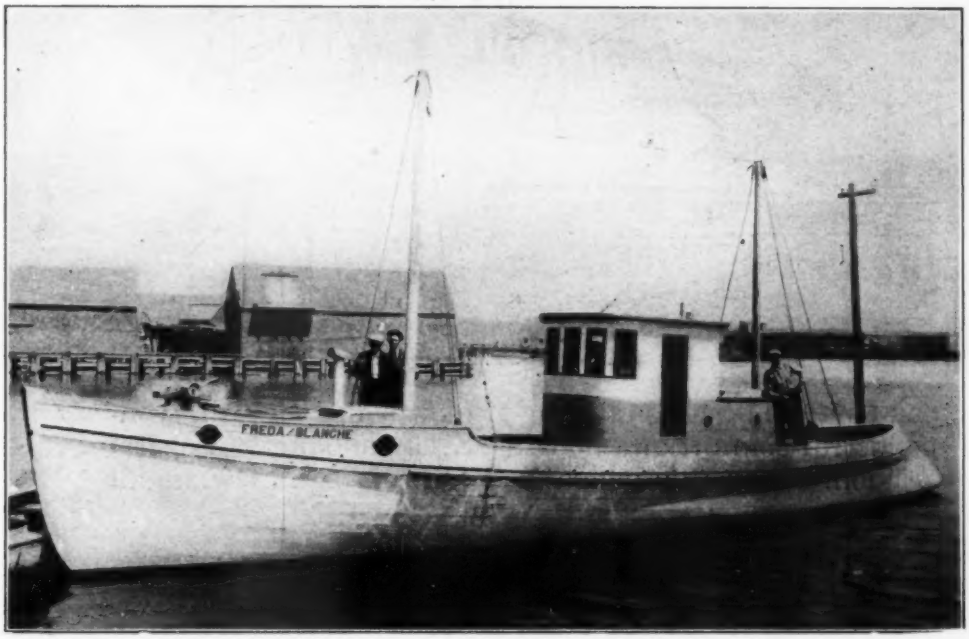
HACKER BOAT CO. - DETROIT, MICH.

Advertising Index will be found on page 142

GRAY-PRIOR
FOUR CYCLE
MARINE MOTORS
Built up to a Standard—not down to a price

Medium Heavy Duty Type—for Commercial Boats and Cruisers

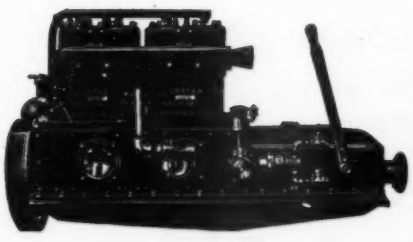
Experience Built It—
Experience Chooses It



FREDA and BLANCHE is a 56 foot freight boat owned by Capt. J. M. Tidd, Little River, Nova Scotia. Her 36 H.P. GRAY-PRIOR engine drives her 11 miles an hour

The GRAY-PRIOR Model D Marine Engine is an ideal power plant for work boats like that shown above, and for cruisers requiring plenty of power with the steady reliability that you find only in a high grade four cycle engine which easily develops its full rated power at medium R. P. M. If you have a boat of this type, you'll be interested in what we can tell you about successful GRAY-PRIOR installations—actual facts, not theories.

Built in One Size Only—Rated 36 H.P.



Bore 4½ inches. Stroke 8 inches. The long stroke gives unusually smooth operation and steady pulling power. It develops 36 real horsepower and will run under this load continuously. We have spared nothing in design, materials and construction to make this the most satisfactory engine of its size and type you can buy.

Write today for detailed description and prices
Immediate shipment on early orders

THE GRAY & PRIOR MACHINE CO.

56 Suffield Street, Hartford, Conn., U. S. A.

GRAY-PRIOR
FOUR CYCLE
MARINE MOTORS
Built up to a Standard—not down to a price

MAKERS OF FINE YACHTS.

YACHTING THAT SATISFIES

55 ft. x 15 ft. x 3 ft. House Yacht.

This will be a big yachting year; why not enjoy the wonderful comfort of a houseboat? Economical in operation. A boat on which guests, owner and crew are all

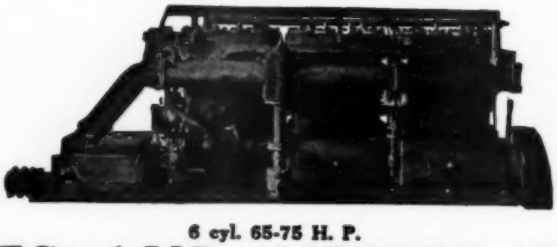
SATISFIED

FOR SALE OR CHARTER

Two 85 ft. House Yachts are now in commission, and two 73 ft. House Yachts will be ready for delivery July first. Write or phone for complete specifications.

20th CENTURY MOTORS

Continuous Satisfaction for Nineteen Years is our Record



Built in sizes:
2-Cyl. . . . 15-20 H.P.
4-Cyl. . . . 40-50 H.P.
6-Cyl. . . . 65-75 H.P.
All 6½" Bore x 8½" Stroke

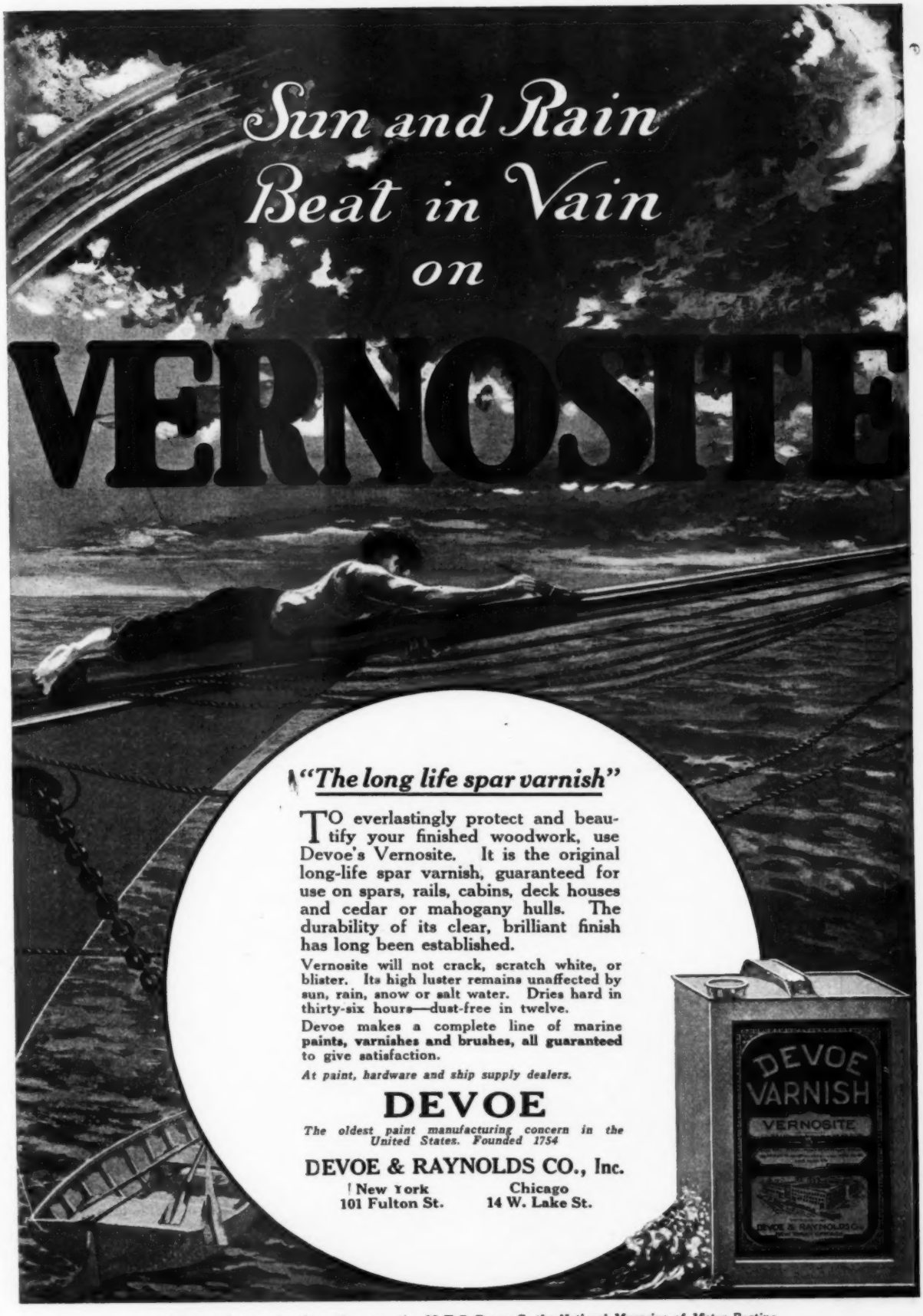
HEAVY DUTY TYPE

6 cyl. 65-75 H. P.

YACHTS AND HOUSE BOATS

NEW YORK YACHT, LAUNCH & ENGINE CO.
BUILDERS
MORRIS HEIGHTS, NEW YORK CITY.

Advertising Index will be found on page 142


Sun and Rain
Beat in Vain
on
VERNOSITE
"The long life spar varnish"
TO everlastingly protect and beautify your finished woodwork, use Devoe's Vernosite. It is the original long-life spar varnish, guaranteed for use on spars, rails, cabins, deck houses and cedar or mahogany hulls. The durability of its clear, brilliant finish has long been established.
Vernosite will not crack, scratch white, or blister. Its high luster remains unaffected by sun, rain, snow or salt water. Dries hard in thirty-six hours—dust-free in twelve.
Devoe makes a complete line of marine paints, varnishes and brushes, all guaranteed to give satisfaction.
At paint, hardware and ship supply dealers.
DEVOE
The oldest paint manufacturing concern in the United States. Founded 1754
DEVOE & RAYNOLDS CO., Inc.
New York
101 Fulton St.
Chicago
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DEVOE
VARNISH
VERNOSITE

ASTORIA MAHOGANY
LUMBER & VENEERS

Mahogany Veneer in the Making

When a mahogany log comes up to the standard set by our veneer experts, it is "quartered" in the manner which will ensure the full beauty of figure. Then away it goes on roller conveyors to the steam vats for softening, preparatory to being sliced into veneer.

The perfect co-ordination of man and machine has contributed greatly in making this the largest mahogany lumber and veneer mill on the Atlantic and Gulf Seaboard.

ASTORIA MAHOGANY COMPANY, Inc.
1031 Steinway Avenue
Long Island City N. Y.

Successors to
Huddleston-Marsh Mahogany Co.
Astoria Veneer Mills and Dock Co.
F. W. Kirch, Inc.

Mills and Yards, Long Island City, New York

BRANCHES:
44 North Market Ave., Grand Rapids, Mich.
2256 Lumber Street, Chicago, Ill.

Why Neglect Our Inland Waterways?

(*Continued from page* 104)

Water Terminals

Interchange of traffic between rail and water carriers involves breaking bulk or transfer between the boat and the car. This might be considered as a distinct disadvantage compared with interchange between different lines of railroad, but such a handicap is more apparent than real. In the first place, the decreased rate by water will allow quite a margin for the expense of transfer but, as a matter of fact, the cost of such transfer and the time involved may be reduced to a minimum through the facilities of a modern water terminal. The value of such terminals has long been recognized in continental Europe and the comparatively few which have been constructed in the United States upon our interior waterways confirm their value. An adequate water terminal must have suitable bulkheads, capacious warehouses, modern transfer facilities, and railroad tracks connecting it with all the railroads serving the community or city. It must also be connected with the system of highways. Under our present policy such water terminals must be constructed at the expense of the community or city, or through the agency of the State, and must be open to the public upon equal terms. If we may assume that the demand for the movement of traffic exists and that enterprise and capital will establish and operate lines of boats of a suitable type and that adequate public terminals will be constructed and interchange of traffic between the water lines and the rail lines shall be enforced, there cannot exist the slightest doubt that water transportation under these conditions can and will be maintained and perform a very distinct public service.

Adequate Supervision

It has come to be recognized that every public utility must have some sort of public supervision. This is particularly true of transportation where so many elements exist that must be systematized and co-ordinated in order to render the most efficient service. Continuous operation must be maintained. Just and stable rates must be established. Adequate facilities must be provided. Therefore the public, whom they serve, must through some legal agency be represented and with power to enforce reasonable regulations. This condition has long been recognized as to the railroads. The Federal Government and the States established commissions and officials with power to enforce the law and make regulations. To the same or a limited extent there must be created by law some effective supervision of water transportation. The bulk of water transportation is interstate in character, either because it traverses two or more States, or because of joint traffic arrangements with rail or water lines. Therefore Congress should enact laws creating machinery for the supervision and regulation of water transportation carried wholly by water or by joint traffic arrangements by both water and rail. Under such supervision, advice and assistance could be rendered in the construction of appropriate types of boats and of adequate water terminals. Such supervising authority should have the power to fix both maximum and minimum rates of freight either wholly by water or jointly by water and rail. Such supervision would afford just and suitable rates and provide for shippers the advantage of the lower rate by water as far as practicable where products could be carried both by water and rail between the point of origin and destination.

Congress and the Waterways

Some criticism has been directed during recent years toward appropriations by Congress for the improvement of waterways in what are known as river and harbor acts. Concretely stated, such criticisms were confined to appropriations for rivers upon which the volume of commerce was not deemed commensurate with the expenditure. Undoubtedly these complaints were well founded in a few instances. It may be said, however, in every case, that the small volume of commerce which followed the improvement of the river was not due to the lack of traffic or the character of the stream, but was caused entirely by one or all of the conditions which have been heretofore discussed. Either the railroads discriminated against the use of the river and refused to interchange traffic, and thereby frightened capital from investing in boat lines, or adequate water terminals were not provided and no interchange of traffic was permitted and, finally, there was no effective supervision to bring about the conditions essential for the establishment and maintenance of water commerce upon such rivers.

Public Opinion

The public must be educated upon the value of water transportation and induced to provide the essentials upon which water commerce must be predicated. Certainly we need increased facilities for transportation. The rivers and harbors are available and their use is entirely practicable. An educated public sentiment and intelligent legislation must unite in meeting the emergency.

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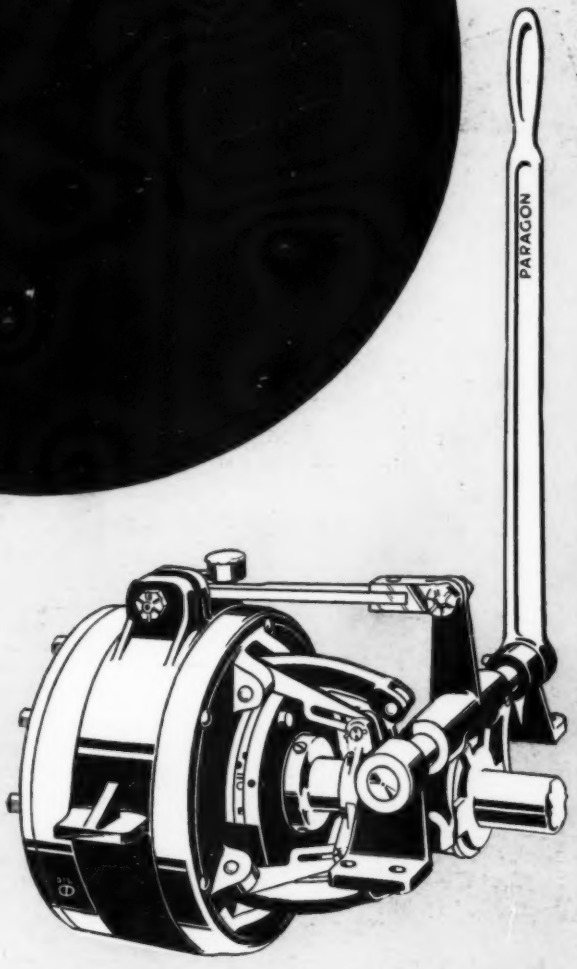
PARAGON REVERSE GEARS

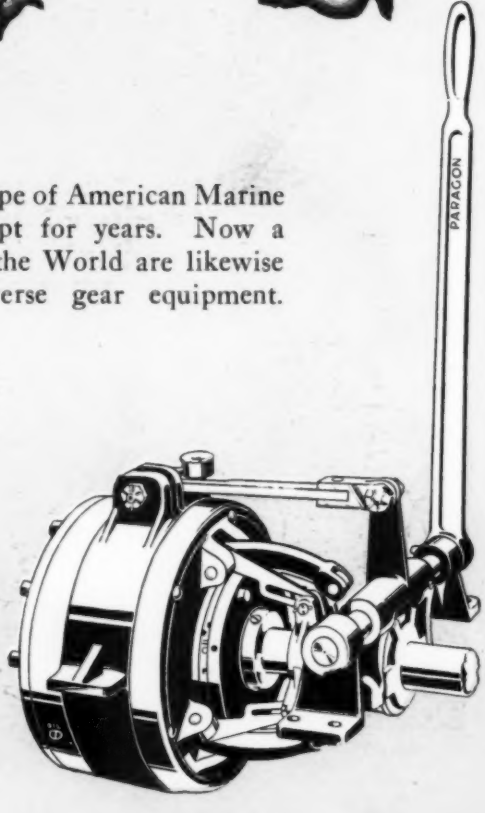
The World Over

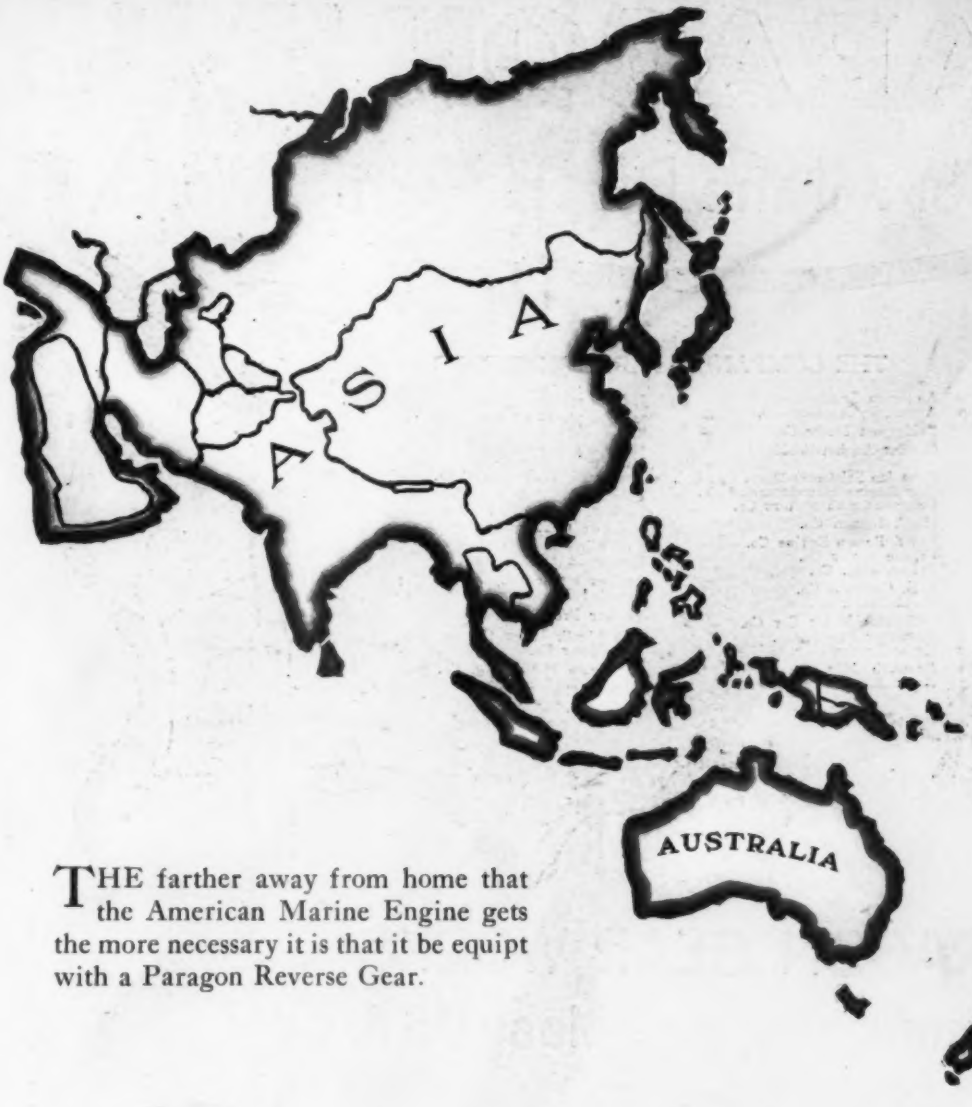


WHEREVER Motor Boats are operated, no matter whether it be Norway's Fjiords, China's rivers or our own Maine Coast, there you will find a majority of them using Paragon Reverse Gears.

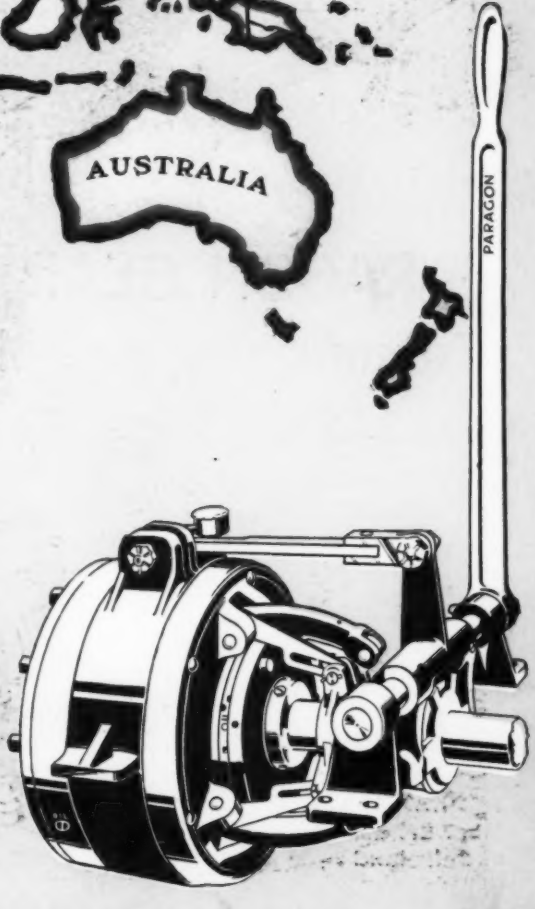
© 1920, Rex W. Wadman Inc.

PRACTICALLY all of the better type of American Marine Engines have been Paragon equipt for years. Now a majority of engine builders all over the World are likewise calling on Paragon for their reverse gear equipment.





THE farther away from home that the American Marine Engine gets the more necessary it is that it be equipt with a Paragon Reverse Gear.



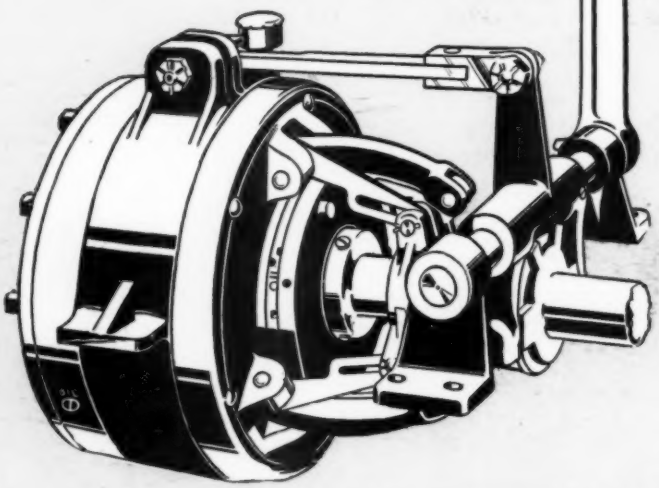
PARAGON REVERSE GEARS

For All the Peoples of the World

THE COMPANIES PARAGON SERVES

Anderson Engine Co.
Automatic Machine Co.
Bridgeport Motor Co.
Camden-Anchor-Rockland Machine Co.
Canadian Fairbanks-Morse Co., Ltd.
Clay Engine Manufacturing Co.
Commonwealth Motors Co.
H. C. Doman Co.
Fay & Bowen Engine Co.
Frisbie Motor Co.
Fulton Mfg. Co.
J. S. Gaffga & Co.
Gaeth Motor Co.
Hall-Scott Motor Car Co.
Hettinger Engine Co.
Hulse Brothers
Kermath Mfg. Co.
Knox Motors Associates
J. W. Lathrop & Co.
Mianus Motor Works
Midwest Engine Co.
Miller Engine Co.
Missouri Engine Co.
Murray & Tregurtha Corp.
New London Ship & Engine Co.
N. & S. Engine Co., Seattle
Regal Gasoline Engine Co.
Red Wing Motor Co.
Remington Oil Engine Co.
Scripps Motor Co.
Straubel Machine Co.
Treiber Products Co.
Van Blerck Motor Co.
Vim Motor Co.
Wisconsin Motor Mfg. Co.
Wright Machine Co.

PARAGON GEAR WORKS
Taunton Mass, U.S.A.

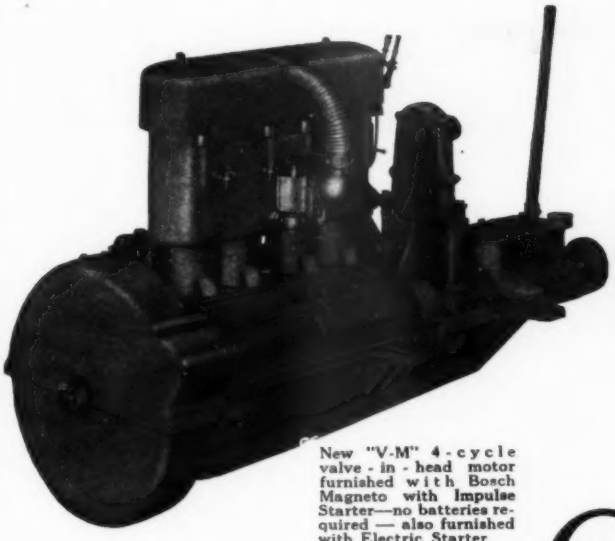


Agents for Great Britain and Ireland

CHAS. CHURCHILL & COMPANY
15 Leonard St., Finsbury, London, E.C.

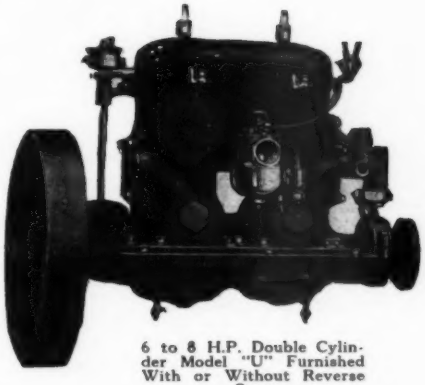
Gray Marine Motors for 1920

"the engine with the big crank shaft"



New "V-M" 4-cycle valve-in-head motor furnished with Bosch Magneto with Impulse Starter—no batteries required — also furnished with Electric Starter.

This new model V-M 4 cycle engine marks an epoch in Marine Motor History



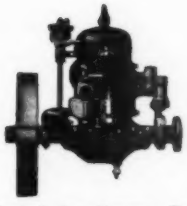
6 to 8 H.P. Double Cylinder Model "U" Furnished With or Without Reverse Gear

OVERHEAD valve marine-motors are acknowledged to be of greater efficiency and power than other types and in the Gray the ultimate or valve-in-head marine motor perfection has been attained.

The Gray is designed to operate on either gasoline or kerosene, it cannot backfire, it burns the fuel keenly with practically no carbon, soot, smoke or odor and lubrication troubles are unheard of in the Gray.

Our Hot-Spot Cylinder Head gasifies thoroughly the fuel used and renders it completely combustible.

Gray Two-Cycle Motors are built in models from 3 to 8 h. p. Gray Four-Cycle Motors are built in three sizes, 10 to 50 h. p. Write for FREE catalog.



Selected for Canoes, Row Boats and Small Launches. 3-8 H.P. 2-cycle Gray Motor. Standard the World Over.

GRAY MOTOR COMPANY 2106 MACK AVE., **Detroit, Mich.**

Two New Motor Boating Hand Books Ready

THE IDEAL SERIES

Two new MoToR BoatinG Handbooks are now ready for delivery. The two new books are known as the Ideal Series and they fill a gap in our otherwise complete line of books for Motor Boatmen.

The new books deal exclusively with designing and building small motor boats. The titles are

Vol. I—Designs of Ideal Motor Boats.

This volume describes in detail how to design a motor boat. It also contains complete plans of 30 Cruisers. Runabouts and Auxiliaries. The plans include lines, table of offsets, interior plans, profiles, construction details, etc. There is no book published at the present time which describes in everyday language the details of designing a boat according to your own tastes. The plans of Ideal Cruisers, Runabouts and Auxiliaries are complete in every particular. They include the best of the plans published in MoToR BoatinG during the past several years. The plans include boats of from 20 feet in length up to 40 feet. The drawings are all to scale and large size.

Vol. II—How To Build Sixteen Ideal Motor Boat Boats.

This book gives complete information for building the following boats:

9-foot dinghy
10-foot mark boat
12-foot outboard motor boat
12-foot speed boat
12-foot bangabout
13-foot sea skiff
16-foot sharpie
18-foot runabout
20-foot monoplane
20-foot hydro-runabout
20-foot knockabout
20-foot tunnel stern
22-foot V-bottom runabout
25-foot V-bottom cruiser
25-foot round-bottom cruiser
28-foot cruiser (Consort II)

Every article is fully illustrated with working drawings and no information or instructions are missing which would be of assistance to the novice to build his own boat.

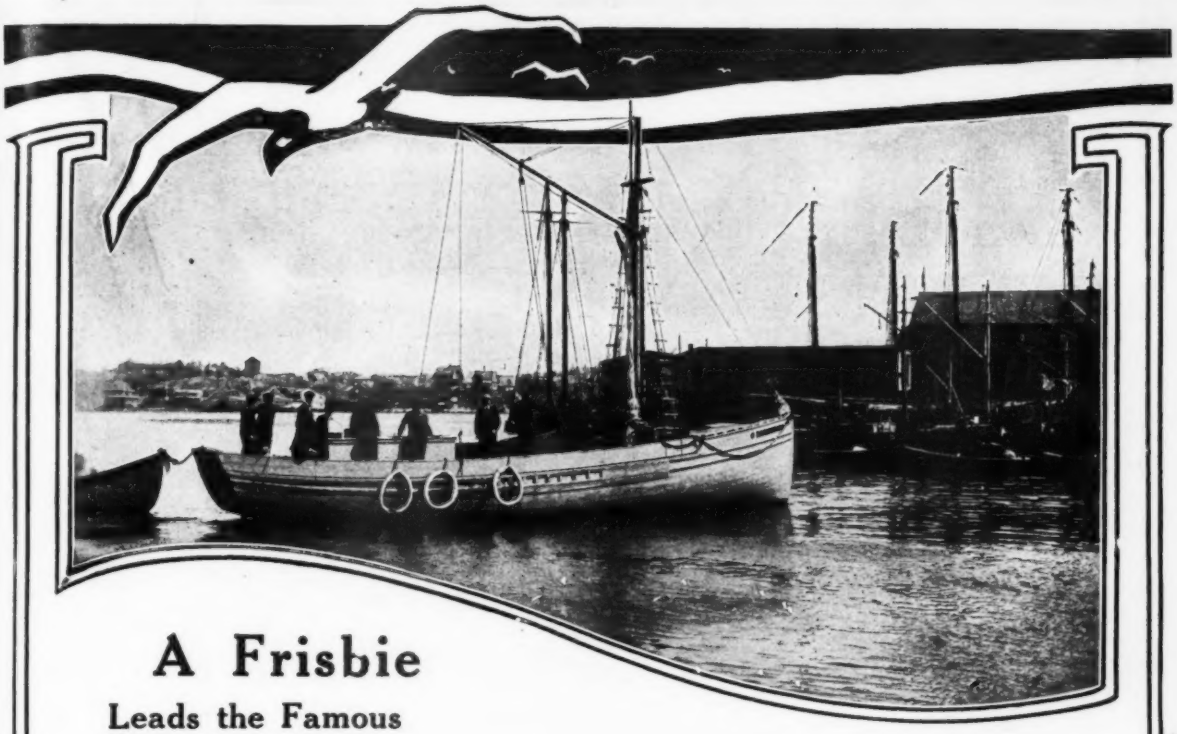
Both of the Ideal Books are printed in large type on extra fine paper. They have been edited by Charles F. Chapman, editor of MoToR BoatinG.

Price $2.00 each or the two books for $3.00

MOTOR BOATING

119 West 40th Street New York

Advertising Index will be found on page 142



A Frisbie

Leads the Famous Gloucester Fleet

"Stella of Italy," the fastest boat in all the Gloucester fishing fleet, is powered with a six cylinder, 75 H.P. Frisbie — additional proof that the Frisbie Valve-in-Head Motor takes first place in hard grinding workboat or commercial service.

In North and South American waters, in Europe and in the Orient, wherever medium duty motors are used for work or pleasure, the "friendly" Frisbie leads in the development of power from the fuel used, in reliability of performance and in economy of operation.

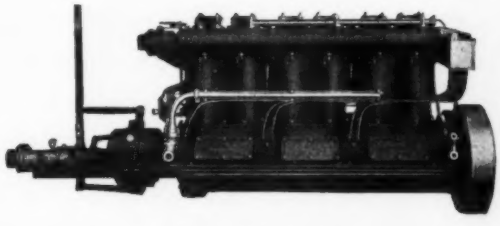
Write for complete catalog and name of nearest Frisbie dealer.

Frisbie Motor Company
7 College St., Middletown, Conn.

1 cyl. 5 and 7 H.P.
2 cyl. 10 and 16 H.P.
3 cyl. 18 and 25 H.P.
4 cyl. 30 and 40 H.P.
6 cyl. 50 and 75 H.P.

All Four Cycle

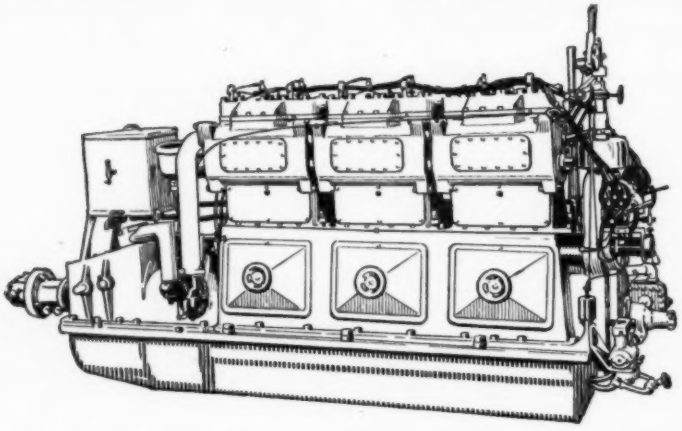
Frisbie VALVE-IN-HEAD MOTOR



Frisbie an' I

Winton

GASOLINE MARINE ENGINES



From 80 H. P. to 200 H. P.

For workboats and yachts, the Winton Engine Works builds six-and eight-cylinder gasoline engines in five sizes, from 80 to 200 H. P.

These are exceptional engines, built to a high standard and able to perform hard work with little fuss, little noise and practically no vibration. Incidentally, their operation is so clean that a Winton marine engine room aboard ship can be as spick and span as a library.

Engineers operating Winton gasoline marine engines are uniformly delighted with them, and we have a long list of satisfied buyers which we shall be glad to submit to you if you are interested.

Details of all five of these engine sizes are now available in a new booklet, copy of which we shall send you on request. Also, our Engineering Department is ready to co-operate with you and your Naval Architect in working out a happy solution of your precise needs for either workboat or yacht. We shall be pleased to have you write us.

WINTON ENGINE WORKS

2122 West 106th Street, Cleveland, Ohio

DEALERS: New York—A. G. Griese, 120 Broadway. New Orleans—A. Baldwin & Co., Ltd. Jacksonville, Florida—D. J. Carrison & Company. San Francisco—F. G. Bryant, 424 Ellis Street. Seattle, Washington—H. W. Starrett, Sunset Engine Company.

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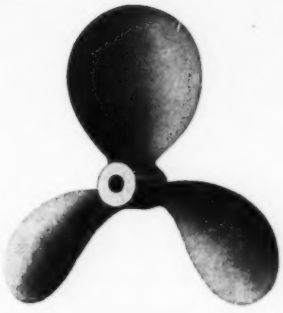
HYDE PROPELLERS



FOR your boat—whether it is hydroplane, runabout, cruiser or work boat—there is a Hyde Turbine Type Propeller that will give you the utmost in speed and power.

Write for our latest catalog "Propeller Efficiency". It also contains information of interest to every motor boat owner. A copy, together with data sheet, will be mailed upon request.

HYDE WINDLASS COMPANY
BATH, MAINE

GIBBS QUALITY

Houseboats

What would be more ideal than a winter in Florida on a modern cruising houseboat?

In GIBBS-built houseboats is embodied all that excellence of arrangement, quality of construction and perfection of finish that is expected in a luxurious home. Our latest types are marvels of convenience and completeness, equalling one's own home in comfort, without the sacrifices that are often associated with outdoor life.

Let us submit plans, sketches or photographs if you are interested—no obligation. Or if it's a motor yacht, cruiser or runabout you want, you'll still find GIBBS Quality and facilities worth considering.

There are many reasons why you should have your next Florida boat built in Florida. Not the least of these is the experience and demonstrated ability of this company.

Order now for winter delivery.

GIBBS GAS ENGINE COMPANY

JACKSONVILLE, FLORIDA

Advertising Index will be found on page 142

Supply Stations for Socony Motor Gasoline and Polarine Oils and Greases

The Standard Oil Company of New York operates directly at all points except where other representatives are listed.

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Bond & First Sts. Brooklyn — Gowanus Canal; S. O. Co. of N. Y.
Ulmer Park Pier — A. L. Anderson
Ft. 69th St., So. B'klyn — C. Poling
Port Richmond, S. I. — S. O. Co. of N. Y.
Tottenville, S. I. — S. O. Co. of N. Y.
Stapleton, S. I. — Barge No. 30; Capt. Cattermole

EAST RIVER

Ft. N. 10th St., B'klyn; Ft. E. 10th St., N. Y. C.; Ft. E. 120th St., N. Y. C. — S. O. Co. of N. Y.
Ft. E. 23rd St., N. Y. C. — The Anna Service
Ft. Walnut Ave., Bronx Kills, N. Y. — John Rehm

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City Island, N. Y. — Robert Jacobs; A. Malakoff; J. Vidal; B. F. Wood
Port Chester, N. Y. — J. Kapp
College Point, L. I. — W. Needham; F. & W. Kraemer
Beechnut, L. I. — J. H. Kelly
Port Washington, L. I. — H. Berg
Glenwood Landing, L. I. — James Fyfe
Oyster Bay — H. G. Bacon
Cold Spring Harbor, L. I. — E. Abrams & Son
Huntington, L. I. — Wheeler Shipbuilding Co.
Port Jefferson, L. I. — Emergency Fleet Corp.
Greenport, L. I. — W. W. Griffin
Fisher's Island, L. I. — G. Frank Tuthill; A. H. Eldredge; Fisher's Island Farms, Inc.
Shelter Island, N. Y. — N. P. Dickerson

CONNECTICUT

Greenwich, Rowayton, New Haven, Groton, Saybrook, So. Norwalk, Stony Creek, Noank, Stonington, West Mystic, Stamford, Bridgeport, New London, Mystic

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Rockaway Point — P. H. Reid
Flatlands Bay — Chas. Morse
Canarsie (Barge 60) — Chas. Morse
West Sayville — F. Ockers
Patchogue — W. R. Marran
Montauk — E. B. Tuthill
Freeport, L. I. — J. Carcich
East Rockaway, L. I. — S. S. Rhame
Bayshore, L. I. — A. H. Eldredge
Amityville, L. I. — W. J. Ketcham

HUDSON RIVER

W. 140th St., N. Y. C. — F. R. Welch
Yonkers, N. Y. — S. O. Co. of N. Y.; Corinthian Yacht Club; J. C. Anderson, at Germania Yacht Club
Tarrytown, N. Y. — Tarrytown Boat Club

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P. V. Washburn & Son
Wm. Stilman
Van Rensselaer — Capt. Godfrey; Island Creek Smith
Rensselaer — Bailey & Parker
Albany — Albany Yacht Club

NEW YORK STATE

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Skaneateles — on Skaneateles Lake
Cayuga — on Cayuga Lake
Ithaca, on Cayuga Lake — W. A. Murray; Champaign Bros.; F. E. Johnson
Watkins, on Seneca Lake — F. D. Fordham; Watkins Garage
Geneva, on Seneca Lake
Dresden, on Seneca Lake — J. L. Sweigart; F. H. Remer
Glenora, on Seneca Lake — M. D. Marks
Penn Yan, on Keuka Lake — M. J. Gavin; E. L. Geer
Branchport, on Keuka Lake — Burtch Bros.; E. L. Parker Co.
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Raquette Lake, on Raquette Lake — Dennis Dillon
South Bay, A. A. Morse
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Constantia, Coble & Tanner — on Oneida Lake
Bernhard's Bay, E. E. Dickinson
Cleveland, Cleveland Motor Car Co.

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Fulton

BARGE CANAL—CHAMPLAIN DIVISION

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Stillwater, Schuylerville
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Carlton, Sodus Point, Sea Breeze, Sackett Harbor, Summerville, Point Pleasant, Manitou Beach, Newport, Charlotte, Oswego, Henderson Harbor

LAKE ERIE

Buffalo, Dunkirk

NIAGARA RIVER

Buffalo (foot Erie St.), Tonawanda, No. Tonawanda

ST. LAWRENCE RIVER

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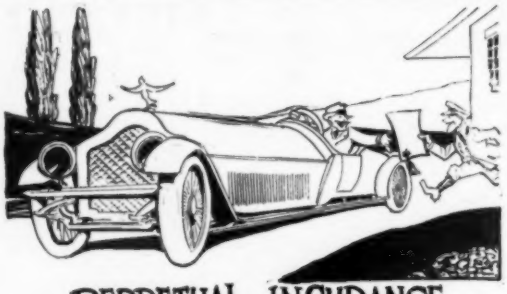

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will last forever and tell you accurately the condition of your spark plugs. It locates the trouble and tells what to do to fix it.

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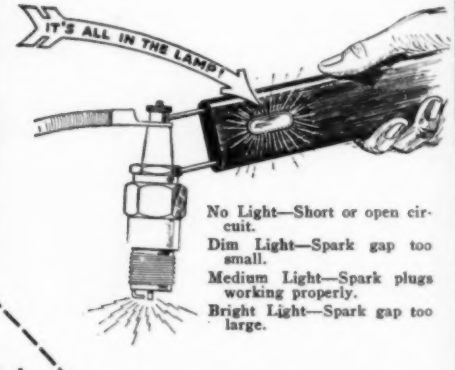

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South America As a Market for Marine Motors

(*Continued from page 29*)

product and yet, such houses have made the reputation of certain American lines and are now continuing the work. It is a problem that requires both clear thinking and investigation.

In order to show just what the market for motors may be in the future in the South American Republic, it may be well to cite some statistics concerning just one part of the country, northern Argentina. The cities of the district, with recent estimates of population, are as follows: Rosario, 243,000; Cordoba, 152,000; Tucuman, 90,000; Santa Fe, 80,000; Salta, 40,000. There are also many large towns with a population of from 5,000 to 20,000, the principal ones being Resistencia, Jujuy, Santiago del Estero, Catamarca, La Rioja, Corientes, Esperanza, Reconquista, Posadas, San Francisco, Rafaela, and Rio Cuarto. All of these are on water transportation lines of some kind. Perhaps on the borders of a lake, along the course of a river, or the banks of a smaller stream, navigable only by shallow draft, flat bottomed craft, or perhaps navigable only at certain seasons of the year. However, there is a certain market in all of these places, and a larger one can be created with judicious publicity.

There are three main trade routes. The first follows the River Parana northward to the forests of the upper river, being served by river boats, and by the French narrow gauge railway. Boats make regular trips to Paraguay and monthly trips to western Bolivia. The second route runs northwesterly from Rosario through some of the best agricultural lands, through Cordoba, the sugar district of Tucuman and Jujuy, and to the Bolivian border. The third runs westerly through farming and stock raising regions to Mendoza, connecting with Chile.

Northern Argentina is agricultural and pastoral rather than industrial in character, and its interests consist in grain, cattle, logging and dairying; with the local industries of tanning, milling, soap and glycerine making, door and sash manufacturing, and leather working. Distances are comparatively great with roads and streams mainly unimproved. In selling marine motors here the main difficulty to overcome will consist in European competition controlling branch houses with long established connections and sales organizations; in making prices that will meet native competition, by which I mean, the economic factor. If a marine motor cannot do its work more efficiently and cheaply than a sail boat or pole powered craft, such as many that are at present in use in the country it will make little headway. Another disturbing factor will be the high selling costs necessary to do business.

The recognized credit terms in the section are ninety days from the arrival of the goods; but under existing conditions importers realize that they must pay cash against documents in New York when required. However, they consider that they should be allowed to examine goods in the customhouse before paying or accepting drafts, and it is probable that when normal conditions are reestablished, they may insist upon that privilege.

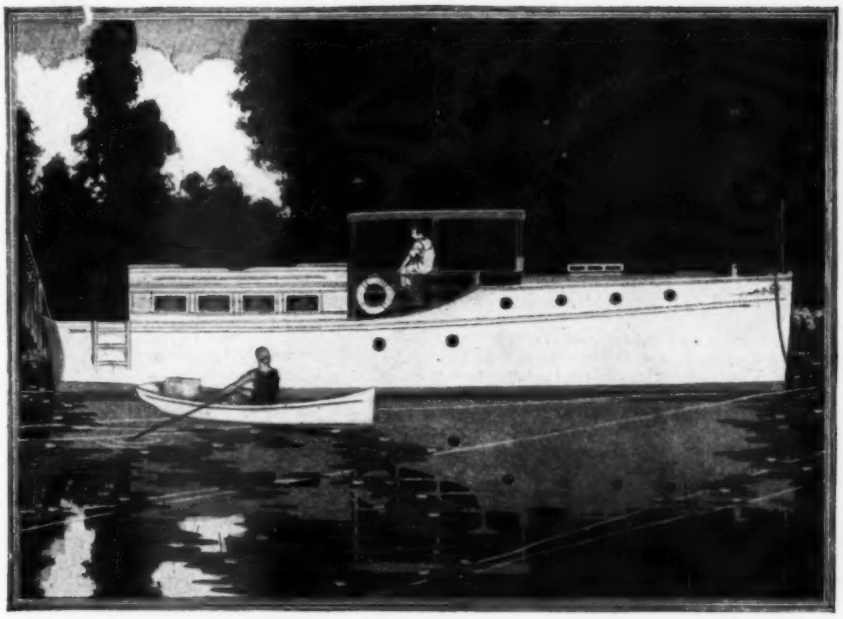
In the Para, Brazil territory, motors from the United States already hold undisputed sway, about ninety-five per cent of those in use having been imported from this country, this list including practically all of the well known makes.

The demand is principally for motors of 8 h.p. and up, to power small sized workboats, and while smaller engines are also imported they are mainly employed in moving row boats. In this work a number of outboard motors have been very successfully used. The future demand in the district adjacent to Para will be greatly influenced by the success of the "poor-gas engine," which up to the present has, owing to the accessibility and cheapness of the fuel, brought about most surprising economies; and it has the further advantage of being adapted for handling by any ordinary engineer. An engine of this type is being installed in a tunnel boat that is being built for work on the headwaters of one of the rivers, where the cost of kerosene and gasoline is very high and the supply limited. The Para region is peculiar owing to the fact that its principal business is the gathering of forest products, and agricultural pursuits are only in their infancy. For these reasons the development of river motor-driven traffic and exportations from the port are as yet comparatively small, but as the port develops the demand for motor boats of all kinds will increase and with the prestige already established by American built motors, there should be little difficulty for the motor builders of the United States to control the business. Para has direct communication with the ports of the United States, notably New York and New Orleans, and for that reason it is a matter of no difficulty to receive shipments without the delay usual in some other parts of Brazil.

Chile has been a good consumer of gasoline and kerosene engines, figures for the year 1917 (the latest available at this time) showing that this South American nation imported motors to the value of $125,382 of which $80,791 came from the United States, $19,528 from Great Britain, $13,316 from

(*Continued on page 136*)

Advertising Index will be found on page 142



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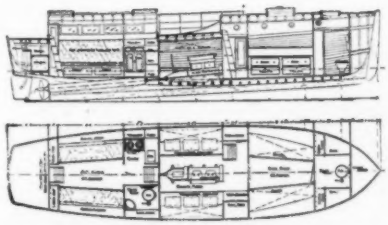


A large bridge deck where all may gather; all controls on bridge deck. Two light and airy cabins with full head room—two toilets. Engine room well ventilated, power plant completely accessible, full head room at forward end. Fully equipped galley. Power plant a Scripps Model D four-cylinder, four-cycle motor; 35 H. P. electric starting and lighting system.

Speed 11 miles per hour. Marine plumbing, fittings and furnishings of the highest grade. The price, $4,950, includes complete cruising equipment. Throughout, the boat is superior in every manner to any cruiser of similar character at its price. Thoroughly, substantially and KNOWINGLY constructed. A cruiser of long life, beautiful appearance, comfortable accommodations and highly satisfactory performance.

We want you to see what selective design based upon average requirements instead of arbitrary design has given to the motor-boating field.

May we send you the complete specifications and photographs?

BURGER BOAT COMPANY, MANITOWOC, WISCONSIN

BURGER BOATS BEAUTIFUL

Victory II Wins Handicap Cruiser Championship

(*Continued from page* 18)

should have. Rain during the night and morning made the work of Rosie the photographer more difficult and served to dampen spirits a bit. The race committee, presided over by Ed Tucker, and consisting of Messrs. A. B. Clark, C. H. Moore, W. Kirk, and J. W. Broomhead, spent an extremely busy morning inspecting the numerous contestants to see that they complied fully and in all particulars to the conditions of the race, and the deed of gift governing the award of the trophy.

The course of the race was from a line near Huckleberry Island to and around the southerly buoy at Stratford Shoal light, returning to the can buoy off Etons Point, and finishing between the new and old Lloyd Harbor lights, a distance of 50 nautical miles.

In point of interest and numbers of contestants, the race was by far the biggest and best motor boat racing event that has been run in many years. The committee in charge are to be congratulated in assembling such a fine class of motor boats in this race and also on the creditable way in which the race was conducted.

At the starting signal at 1 o'clock, Uonda was successful in crossing the northerly end of the line first, a second or two behind the smoke of the gun. Victory II pressed her closely and was only a half length behind. Turtle followed closely on the southerly end of the line and Pickaninny was observed to be coming through the fleet like a race horse. The other contenders were closely grouped and it is difficult to say just what the order of crossing really was. We on Victory II settled ourselves down to the immediate task of sailing as straight a course as was possible for the Stratford Shoal buoy. Paper Doll came alongside, however, and caused us some anxiety, as she crowded us very much to the northward. We could not pass her, neither could she pass us, and there we were, going two points too far to the north and getting hotter under the collar all the time. Finally we slowed a bit and passed under her stern so that we could resume our proper course, and quickly lost Paper Doll. Commodore Joe Wallace had entered his Paper Doll at the last minute, for old times' sake. Paper Doll is ex or née Triumph, Commodore Jackson's first motor boat, owned by the victor of the race when he (being only a windjammer, and tiring of such a tame sport) was somewhat skeptical whether he should take to himself a wife or a motor boat—he decided upon the latter, as it would take two to decide the former, and the Commodore doesn't believe in allowing anyone to decide his problems for him.

Paper Doll was loaded with guests, who wanted to see the race, 200 gallons of water, 150 gallons of gasoline, and all the good things of life. Among the guests was the celebrated actress, Miss Pauline Chase, who played "Peter Pan" in England 1,500 times and who was first known as the "Pink Pajama Girl" in the "Liberty Belles." Miss Chase and her husband, Alexander V. Drummond, enjoyed the race hugely, as did the other guests, among whom were included Mrs. Maud Merrill, who played in "Peter Pan" with Miss Chase several years ago, and with whom the Drummonds are visiting; Mrs. Wallace, Miss Jean Wallace and Miss Sybil Brewer of Hartford. The real crew consisted of the Commodore and F. E. Greenwood. "Mr." Waterhouse looked somewhat older and heavier than in the old Thistle days, but quite natural, to those who remember that far back in racing days.

Thetis got away very badly; apparently her motor cut up just at the starting point and she was a bit late in crossing. Later she forged to the front and Marilene, Champ and Thetis kept each other company throughout the entire race. At the Stratford Shoal mark these three turned within thirty seconds of each other and at the finish of the race they all finished within three minutes. Pickaninny traveled fast and very soon was lost to sight in the haze which limited the visibility to a few miles. Turtle sailed fast also, but apparently her navigator failed to watch his compass very closely, as it was plain to be seen that his course was far to the south of where it should have been. After the finish the general consensus of opinion was that Turtle would have done much better had Tom Farmer and his crew steered a more direct course.

Navigating a fast cruiser in a race is more of a task than would appear at first glance. In order to keep a proper log it is necessary to keep track of the passing time of all prominent points, and on the Victory it is necessary that proper ceremonies be observed at each light. The slide rule is an important instrument. It is necessary to compute the speed continuously. Questions like, how far are we ahead of him? or, how fast did we do the last leg? came fast and needed to be answered promptly.

As we approached the turning mark at Stratford Shoal we noted Pickaninny on the return leg. We observed the time when she passed Victory to be exactly 4 o'clock. Turtle turned the mark at the same moment. Marilene, Champ and Thetis all turned about eight minutes later, and Victory turned at 4.13. Some more rapid calculation, with the result that Pickaninny was estimated to have beaten Victory at the rate of 30 minutes in 30 miles, or 50 minutes in 50 miles. Since she allowed us more than an hour, we figured correctly that we need not worry any longer about her, as we knew we had her beaten.

About this time we encountered a regular procession of boats. Paper Doll was again close behind us. Uonda was six minutes behind, followed closely by Marguerhea and Josephine. Sentinel was the next most dangerous competitor from our point of view. She turned the easterly mark at about 4.27. This meant that we were only 14 minutes ahead of her at this point. If she kept up this rate of progress she would finish 22-odd minutes after us, and since her allowance was 22 minutes, 19 seconds, her chances were still very good, and we were not overconfident of being able to gain at any faster rate. Fortunately, perhaps, for us, the wind freshened noticeably on the westward run and a little heavier sea resulted. We regained our confidence somewhat, as we knew Sentinel with her smaller power plant would be retarded more than we would.

Sentinel, Spendthrift, Adelew and Kodak followed along in the order named and were all duly observed and their positions estimated. With the possible exception of Sentinel we were not afraid of any of these and continued on our course.

At the Eatons Point can buoy we went through the same routine of checking up the positions of all dangerous competitors. Our observations here were most reassuring, as we found that our position with respect to Sentinel had improved noticeably on the 14-mile run back. At the finish line, which was crossed at 6.32, we lingered a bit to find how we stood with respect to the faster boats, which had finished earlier. Good news came to us from the Committee boat. C. F. Chapman, Secretary of the Racing Commission, A. P. B. A., acting as judge and timekeeper at the finish, assured us that up to this point we were the victors. This pleasing information was again properly celebrated and we eagerly awaited the finish of Sentinel. She crossed the line at 6.56; a rapid computation and we realized that we had beaten her by four minutes. This was ample margin for us to feel certain of our unofficial figures.

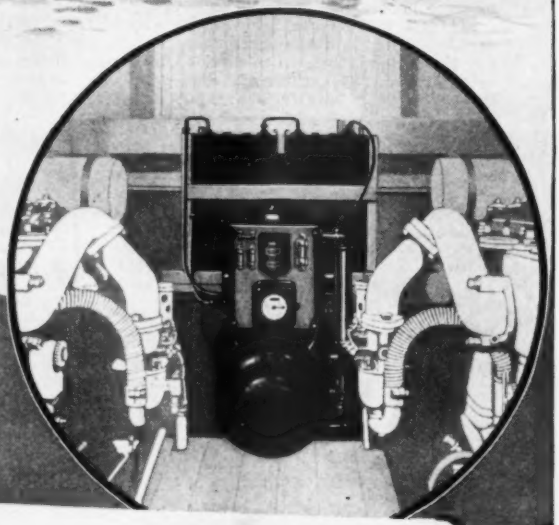
After the last boat had finished, the Committee boat Farad came into the harbor and announced officially that we had won the race and the championship of America. A noisy ovation from the assembled fleet greeted the announcement, and in a stentorian voice Harry Jackson expressed his thanks to the well wishers. Sentinel was awarded second place, and Champ won third place. The time prize for the fastest boat was given to Pickaninny. Her speed for the fifty-mile run was at the rate of 10.1 knots. We learned later, after some of the excitement had subsided, that Pickaninny had suffered a serious in-

(*Continued on page* 128)

COMPLETE SUMMARY OF RESULTS OF RACE FOR CRUISER CHAMPIONSHIP OF AMERICA, AUGUST 14, 1920

No.	Boat	Owner	Club	L.O.A.	L.W.L.	B.O.A.	M.S.S.	Motor	Bore & Stroke	No. of Cyl.	R.P.M.	H.P.	R.	Allowance	Elapsed Time	Corrected Time	Position
1	Pickaninny	J. V. Doll	Cam. M. B. C.	34.02	32.80	9.02	7.74	Simplex	5¾x5¾	4	650	32.35	42.69	Allows	4-58-41	4-56-41	9
2	Marilene II	H. M. Williams	N. Y. A. C.	46.00	45.00	12.48	11.27	Buffalo	6¾x9	4	500	53.67	40.89	0-14-29	5-17-03	5-02-34	11
3	Turtle	T. Farmer, Jr.	N. Y. A. C.	36.00	35.75	9.10	9.78	Van Blerck	5½x6	4	650	30.89	40.29	0-17-32	5-06-52	4-49-20	6
4	Paper Doll	J. H. Wallace	N. Y. A. C.	40.00	40.00	9.25	8.08	Sterling	5½x6	6	500	35.64	40.14	0-18-39	5-33-18	5-14-39	14
5	Thetis	A. G. Hauver	N. Y. M. B. C.	43.00	41.33	10.54	12.78	Sterling	5½x6¾	4	650	34.73	39.55	0-23-18	5-20-04	4-56-46	10
6	Margaret	W. S. Yee	Cam. M. B. C.	34.35	32.44	9.00	7.69	Peerless	5 x6	4	500	22.10	39.32	0-25-08	Did Not Finish		—
7	Gardenia	H. Anderson	N. Y. A. C.	48.42	43.79	10.25	12.32	Standard	6 x8	4	350	26.39	37.62	0-39-22	Did Not Start		—
8	Champ	W. E. Bond	Tamaqua Y. C.	39.83	39.58	9.83	12.41	Sterling	5½x6	4	575	27.32	37.41	0-41-21	5-18-26	4-37-05	3
9	Spendthrift	Halsey & Van Amringe	Orienta Y. C.	43.58	39.83	9.08	9.28	20th Century	5¼x7¼	4	370	19.36	36.97	0-45-19	5.56-00	5-10-41	13
10	Uonda	A. B. Duryee	Huguenot Y. C.	42.17	40.00	10.42	10.55	Standard	6 x8	3	380	21.49	36.78	0-47-03	5-41-51	4-54-48	8
11	Josephine	C. Walker	Riverside Y. C.	45.20	40.95	12.20	10.40	Keystone	6½x8	4	400	35.39	36.55	0-49-12	5-52-02	5-02-50	12
12	Marguerhea	A. B. Cartledge	Keystone Y. C.	39.50	38.96	9.50	12.90	Hershey-Spillman	4½x5½	6	480	24.60	36.10	0-53-28	5-43-30	4-50-02	7
14	Falcon	P. W. Johns	H. R. Y. C.	38.88	35.17	9.63	10.52	Palmer	5 x6	4	470	18.45	35.01	1-04-15	Did Not Finish		—
15	Victory II	H. A. Jackson	N. Y. A. C.	36.00	35.77	9.00	9.82	Sterling	4¾x5½	4	615	16.95	34.95	1-04-52	5-31-50	4-26-58	1
16	Adelew	F. L. Salomon	Rock. Pk. Y. C.	40.58	39.08	10.00	10.41	Ralaco	4 x6	4	550	13.83	M34.38	1-10-51	6-00-01	4-49-10	5
17	Arasapha	A. Craemer, Jr.	Cam. M. B. C.	35.35	33.48	9.56	8.58	Standard	6 x8	2	350	13.19	33.79	1-17-11	Did Not Finish		—
18	Kodak	R. J. Haslinger	H. R. Y. C.	33.96	32.38	10.38	12.05	Sterling	4¾x5½	4	575	18.68	33.73	1-17-52	6-00-25	4-42-33	4
19	Sentinel	A. E. Luders	N. Y. M. B. C.	36.00	35.79	8.94	9.19	Scripps	5½x6	2	520	12.36	33.03	1-25-08	6-30-00	4-31-00	2

DELCO-LIGHT



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"QUALITY"

Largest Manufacturers of High Grade Engineering Specialties in the World

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29-33-33

Victory II Wins Handicap Cruiser Championship

(*Continued from page* 126)

jury to her motor. About an hour and a half before the finish of the race some water got on the magneto, stopping the motor momentarily on several different occasions. It was noticed shortly after that the flywheel did not seem to be behaving as a respectable kywheel should. It seemed to wiggle slightly and moved fore and aft. An investigation at the time led her engineer to assume that some of the main motor bearings had given way and steps were taken to supply additional oil in an endeavor to avoid further trouble. The motor was cut down and at reduced speed the race was completed. After finishing the record run the motor was taken down and it was found that the crankshaft had broken just forward of the first cylinder crank, and the astounding discovery was made that the motor had been running for an hour and a half at nearly full speed with the broken crankshaft. The motor, a rebuilt automobile motor, was found to be uninjured otherwise, but it seems as though the severe work on a marine job is more than any automobile motor can be called upon to do properly.

Contrast to this the behavior of marine motors. Victory's Sterling motor is now operating in its fifth year and runs better, if anything, than when new. The Scripps motor in Sentinel is also an old machine and does good work daily. The Van Blerck in Turtle did its share, but her navigator didn't. The Standards and the Twentieth Century, as usual, ran without a complaint. Give us an old reliable, ruggedly built marine engine when it comes down to a case of hard, continuous work.

Several others of the boats had their troubles, too, and did not finish. Falcon had trouble with a faulty circulation pump and had to make repairs, and when these were effected, decided it wasn't worth while going the whole course, and abandoned the race. Margaret and Arasapha being slower boats realized that they were hopelessly out of the running and took the short cut into Lloyd's without finishing the race.

After the fleet had assembled, Victory was visited by crews of most of the competing boats and everyone seemed to be pleased with the results. Commodore Cartledge of Philadelphia said that "he thought they knew something about racing, but they learned a lot of new tricks up here and would come better prepared next time." Commodore Jackson likewise can be quoted, and his statement runs to the effect "that, having now been champion of everything at one time or another and having succeeded in winning all the races there were, he intended to retire from the racing game and leave the field clear for a new champion to arise in the future."

Taking it all in all, there was not one of the seventeen starters who was not glad that he took part, and all enjoyed the good fellowship and hospitality of the New York Athletic Club to the utmost.

Sentinel's Race As Seen by W. M. Eldridge of MoToR BoatinG

All honor to Victory, for to Victory belong the spoils—but—it is seldom that one finds two members of a family sharing almost equally the limelight in any one accident. However, it will happen on occasion, and this race was one of the exceptions. Sentinel, second on corrected time, proved that a thoroughbred must win. Plank for plank, duplicates in every particular except power, Victory and Sentinel are sisters, designed and built by A. E. Luders, of Stamford, Conn.

Mr. Luders himself can surely judge best as to the performance of the Sentinel. From start to finish her Scripps motor, now several years old, pushed through mile after mile. Just enough wind and tang to the air gave one the feeling of taking part in a real honest-to-goodness man's race.

On board Sentinel were A. E. Luders, Dr. Stewart of Stamford, and writer, W. M. Eldridge of MoToR BoatinG.

From start to finish our plan had been carefully worked out, courses laid, and our minds set on trimming Victory. Perhaps with just a little more forethought this might have been accomplished, or our defeat reduced to a few seconds instead of minutes. Our course laid out on one of MoToR BoatinG's handy charts was E¾N to Stratford's buoy and then W¾S to Lloyd's. Nineteen minutes from Stratford light Pickaninny passed us and Victory later at 4.18.

From the start we had a doubly interesting opponent in the form of Spendthrift, considered a much faster boat than Sentinel. On first noticing her, about one mile from the start, she was about four lengths behind and ½ mile to port. At Stratford buoy we turned the leader by about 2 lengths. The can at Lloyd's found us even up, and the line was crossed by us about two seconds after she had passed over. So we really had a private race of our own.

Going was fine until we reached our turning point, but from here on we had a quartering wind and sea, which made us regret that we had not left our dinghy behind, particularly as we had figured a win or loss over Victory by seconds.

Advertising Index will be found on page 142

CRANE

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MOTOR BOATING PRACTICAL HAND-BOOKS

Every motor boatman has long felt the need for a really complete and comprehensive library devoted to their favorite pastime—motor boating. One of the obstacles to the accomplishment of this important work was the difficulty in finding any one writer who could cover the field in its entirety. In presenting the new series of practical hand-books, MoToR BoatinG believes that the problem has been solved at last. These books are edited by Charles F. Chapman, M. E., the editor of MoToR BoatinG, and they are the results of months of untiring effort on his part, together with the best of thousands of suggestions sent to him by motor boatmen themselves. The list of the contents given below will give you some idea of the vast amount of ground covered by these volumes.

Practical Motor Boats and Their Equipment

Volume 1.—The first volume tells you what the ideal boat for various kinds of service should be and what to look for in buying a boat. Many suggestions about decoration and hints on all kinds of equipment. All about steering gears, wireless outfits, electrical attachments, etc. Glance over the list of contents appended herewith: Hulls, Ballast and Seaworthiness; Round Bottom *vs.* Sharp Bilge; What are the Advantages of Flare? Raised Deck *vs.* Trunk Cabin; Best Proportion of Beam to Length; Selecting a New Design; The Advantages of Bilge Keels; Open or Solid Deadwood? What Makes a Hull Seaworthy? The $1,000 Cruiser; Buying a Second-Hand Boat; Types of Bows and Sterns; Exterior Arrangement of Cruisers; The Best Cabin Arrangement; Finishing Up the Cabin; Changes in Interior Arrangement; Interior Arrangement for Open Boat; Propeller-Rudder Arrangements; Best Position for the Rudder; Advantages of the Outboard Rudder; Different Steering Positions; Steering Equipments for Motor Boats; Steering Gear for the Cruiser; The Steering Gear for a Runabout; Steering the Boat from the Side; The Electrical Equipment; Making and Wiring a Switchboard; Electric Lighting on a Motor Boat; The Inexpensive Lighting Outfit; Wiring the Small Cruiser; The Storage Battery; The Dynamo Cut-Out; Wireless for a Small Cruiser; Tender for a Thirty-foot Cruiser; Building a Folding Dinghy; Installing the Boat Boom; What is the Best Galley Arrangement; Ventilating the Galley; The Galley Stove and Its Installation; Making a Fireless Cooker; A Portable Cook Box; Running Water for the Cruiser; How to Build a Portable Table; A Table for the Open Boat.

Practical Motor Boat Building

Volume 2.—As its title implies, this volume takes up the building of your own boat. It also covers the construction of the necessary fittings such as awning, windshield, etc. Every boatman sometime or other builds a boat, and a book of this kind will save much time and prevent many mistakes. List of contents: Types of Motor Boat Fastenings; Boat Building Woods; Laying Down a Boat's Lines; Converting a Trunk-Cabin Cruiser; A Steam Box for Amateur Builders; Joiner Between Stem and Keel; Fastening the Frames and Floors; Boring the Forgotten Limbers; Fitting the Garboard Plank; Boring the Shaftlog; Fitting the Stuffing Box; The Stern Bearings for a Cruiser; A Water-Tight Companionway; How to Canvas a Deck; Hinged Water-Tight Hatches; Making a Water-Tight Hatch; The Coaming of an Open Boat; Fitting a Swinging Port Light; Making a Self-Bailing Cockpit; A Water-Tight Window Sash; Making a Water-Tight Skylight; How to Build an Engine Housing; How to Make an Engine Cover; Building a Tool Locker; Constructing an Extension Transom; How to Make a Pipe Berth; An Ice-Box for a Cruiser; Installing a Toilet; How to Rig a Signal Mast; How to Make a Spray Hood; Fitting a Folding Windshield; An Awning for the Open Boat; A Cover for the Open Cockpit; Screens for the Side Light; A Support for the After Light; A Seat for the Man at the Wheel; Removable Davits for the Cruiser; The Boarding Steps; A Bow Rudder for Your Hydro; The Motor-Driven Club Tender.

Practical Things Motor Boatmen Should Know

Volume 3.—Navigation is one of the important subjects covered in volume three of the series. Tells you how to steer, how to increase the factor of safety, and a host of other things relative to the proper running of your boat. The chart and compass are both fully explained in a clear and comprehensive manner. The list of contents will tell you more about it; Advice for the Beginner; Lessons Learned from Experience; Good Things to Know; Increasing the Factor of Safety; Which Way Should the Boat Steer? Why a Boat Steers Badly; Why do Boats Squat? Figuring the Boat's Speed; Ballasting the Cruiser; Getting Off Bottom; To Ride Out a Storm in a Motor Boat; The Why and How of Storm Oil; Preventing Fire; Handling Ground Tackle; Government Charts; Stowing the Anchor on a Cruiser; Diminishing Deviation; Preventing Electrolysis; Stowing and Using Charts; How to Make a Chart Case; Keeping a Motor Boat's Log; How to Make a Sextant; Tides and Tidal Waters; Taking Her Through the Canals; The Best All Round Dinghy; Towing the Tender; Handling the Dory in a Seaway; Getting the Tender Aboard; Planning for a Cruise; Equipping for a Cruise; Equipment for Offshore Cruising; Novel Events for Regatta Day; Handicapping; The Object of a Handicap Rule; Laying Off a Race Course; Measuring the Length of a Race Course; Preparing a Boat's Bottom for a Race; How to Build a Turning Buoy; Starting Boats in a Race; Stowing the Signal Flags; Fitting a Gun Mount; A Fish Box for Your Cruiser; A Cabin Wall Rack.

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Volume 4.—All about the marine motor; what it should and should not be. Tells why the automobile engine is unsuccessful in marine work. The best location for your engine, the ideal engine bed, the fuel tank, exhaust and countless other suggestions that will enable you to get the best results from your power plant. List of contents: Purchasing a Marine Motor; How Many Cylinders? Power per Cylinder; High Speed *vs.* Heavy Duty; Long Stroke *vs.* Short Stroke; Correct Motor Design; Changes in One's Power Plant; The Things that Cause Vibration; The Automobile Engine for a Boat; The Best Position for the Motor; The Ideal Engine Compartment; Placing the Engine in the Hull; Installing a Motor in a Canoe; Installing Power in a Yawl; Converting a "Banker" to Power Engine Installation in a Hydroplane; Putting Power in the Rowboat; Limits of Shaft Inclination; Constructing the Engine Bed; Getting the Motor Aboard; Lining Up the Propeller Shaft; The Best Exhaust; Mufflers *vs.* Under-Water Exhausts; Installing an Under-Water Exhaust; Primary Batteries for Ignition; Keeping the Ignition System Dry; Installing a High-Tension Magneto; From Make and Break to Jump Spark; Installing the Gasoline Tanks; Taking Care of Extra Gasoline; Spark and Throttle Controls; Constructing a Rear Starter; Propeller for Engine and Hull; Installing a Universal Joint; Gearing Motor to Propeller Shaft; The Automobile Throttle; Harnessing the Main Engine; Rebabbitting a Worn Bearing; Should Fuel Line be Inside or Outside.

Practical Motor Operation and Maintenance

Volume 5.—One of the most valuable books of the entire set. Your motor's ills and how to cure them. This volume tells you how to adjust your carbureter, how to fit piston rings, how to remedy poor compression and a number of other things that will enable you to doctor your own motor. List of contents: Locating the Motor's Troubles; The Overheated Motor; Starting in Cold Weather; Overhauling a Marine Motor; How to Save Fuel; The Fuel Situation; Using Low Grade Fuel; How to Run on Kerosene; Supplying the Fuel to the Carburetor; Adjusting the Carburetor; Cleaning the Fuel Tanks; Cleaning the Gasoline Line; Stopping Up the Leak in the Tank; A Home-Made Gasoline Gauge; Carrying an Extra Supply of Oil; Mixing the Fuel and Lubricant; Remedying Leaky Compression; Killing the Carbon Jinx; Tool and Spare Parts to Carry; Removing and Replacing Piston Rings; Repairing a Leaky Cylinder; Grinding a Motor's Valves; Setting the Valves; Timing the Ignition System; Cleaning the Water Jacket; Making and Fitting a Gasket; Patching Up a Bearing; Straightening the Sprung Shaft; Truing a Bent Propeller; Removing the Flywheel; Separating Couplings and Pipe Fittings; Changing the Shaft Hole Location; Utilizing the Exhaust; Disposing of the Bilge Water; Heating a Small Cruiser's Cabin; Operating the Outboard Motor; The Clean and Quiet Boat; Charging a Storage Battery; When the Motor Stops Unexpectedly; Making a Unit Power Plant.

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Volume 6.—This volume is an especially valuable one. You will find in it points covering the care of your boat that you never dreamed of before. Whether you are a beginner or a finished expert this book will give you a better knowledge of the handling of your craft than you can imagine. List of contents: Putting the Boat into Commission; Fitting Out a Thirty-Footer; Suggestions for the Beginner; Refinishing Bright Work; Keeping the Wood Surface Bright; Putting the Boat Out of Commission; Laying Up an Unsheltered Boat; Hauling Out for the Winter; Covering the Boat for the Winter; Launching from a Wharf; Correcting Faults; Lengthening Out the Boat; Moorings and Buoys; Taking Steps to Safeguard the Anchor; What to Use in the Bilge; Preserving the Wood in Boats; Emergency Rigs for the Cruiser; Auxiliary Sails for the Cruiser; Providing an Emergency Rudder; Preparing for Southern Waters; Stopping the Troublesome Leak; Replacing a Broken Plank; Removing Broken Lag Screws; Raising the Boat's Stern; Clearing the Propeller; Protecting the Bow and Stern; Open Boat Sleeping Quarters; Ventilating the Cabin of Small Cruisers; Converting the Open Boat to a Cruiser; Making a Cover for the Open Boat; Preventing Electrolysis; Building a Club Float; A Floating Boathouse; Constructing a Landing Stage; Building the Marine; Keeping the Thief Out; A Place for Your Shore Clothes; Stowing for Life Preservers; The Winter's Alterations; What Changes Shall I Make; The Satisfactory Bilge Pump; The Pressure Water System; Making a Pelorus; Your Storm Curtains; Life-Saving Equipment; The Absent Owner's Anchor Light; Mounting the Reverse Gear.

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MoToR BoatinG **119 West 40th Street, New York**

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For the Finest Engines— the Fastest Boats

RAJAH SPARK PLUGS

IT takes an exceptionally good spark plug to stand up in marine service, enduring the terrific strains of a hotly contested race or firing a heavy duty motor hour after hour and day after day without missing an explosion. Marine motors are operated under full load practically all of the time and only high grade spark plugs can be expected to give satisfaction under these conditions.

The growing popularity of Rajah plugs for marine use is founded on a record of performance which boat owners are coming to appreciate in constantly increasing numbers. Always a high grade plug, always popular with boat owners, we find that more Rajah plugs are now being sold for motor boat use than ever before. Simply because they make Ignition Asolutely Sure.

Standard Rajah Plug $1.00 **Giant Rajah Plug $1.25** **Waterproof Rajah Plug $1.50**

THE NEW WATERPROOF RAJAH PLUG

Ideal for motor boats; waterproof, shockproof, and breakproof

Some boat owners are surprised when they find a spark plug which they can screw into their cylinders and forget. You can do this with Rajah Plugs—they are built to stand the strain. The same qualities have made them popular with aviators, automobile racers, and builders of high grade motor cars and marine engines.

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If your dealer doesn't sell Rajah Plugs, send us his name and we will see that you are supplied, postpaid.

The Rajah Thrust Clip, Hook Clip, Short Clip, and Primary are furnished with ferrules to fit any sized cable. Look for the trade mark on every clip.

Manufactured by Rajah Auto-Supply Co., Bloomfield, N. J., U. S. A.

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Dependable Spark Plugs

You Can Place Dependence in Champions

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There is a Champion Dependable Spark Plug made specially for every type of engine.

In buying, insist upon Champions. Be sure the name Champion is on the Insulator and the world trade-mark is on the box.

J. A. S. 43—7/8—18.
Price $1.00

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Toledo, Ohio

Champion Spark Plug Company of Canada, Ltd., Windsor, Ontario

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DURABLE, WATERPROOF AND ECONOMICAL

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Made by Sanford Mills
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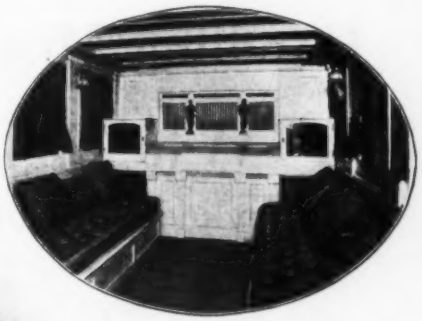
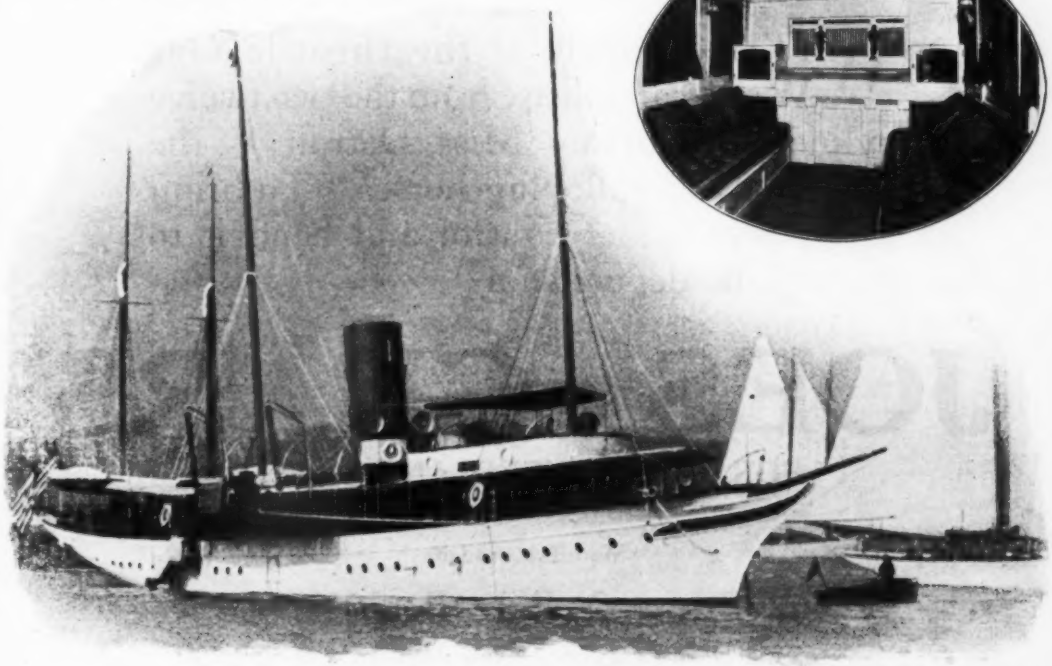
An Appropriate and Practical Material for Boat Upholstery

Chase Leatherwove, the result of years of scientific research and experiment, was produced to fill this want. And in Chase Leatherwove will be found an economical, wear-resisting, and waterproof material best suited to withstand changing climatic conditions.

Write for Samples. Finishes to harmonize with color schemes.





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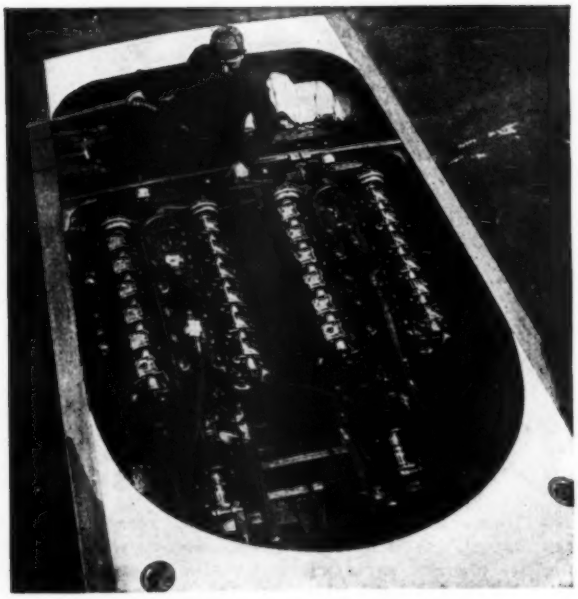

Handling Miss Detroit V's 700 H. P.

WITH a touch of the throttle Gar Wood can release from the two twelve cylinder motors of Miss Detroit V the power of 700 galloping horses. To bring this power under control and bend it to his will, he depends on

JOES GEARS

FOR EVERY NEED AND SPEED

Manufactured by

The Snow & Petrelli Mfg. Co.

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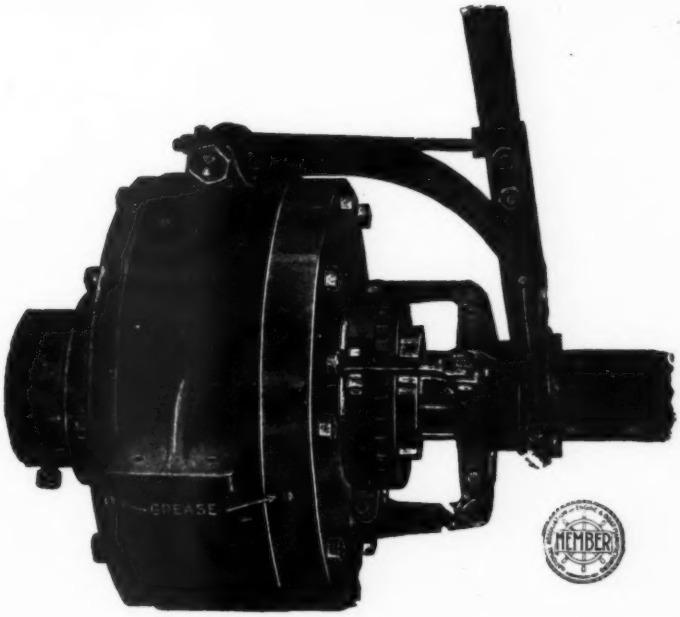

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80% TO 88% REVERSE SPEED RATIO

WE ALSO MAKE JOES ONE-WAY CLUTCHES AND SAFETY REAR STARTERS. WRITE FOR CATALOG

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From New York—meeting place of the world's shipping—where they must vie with sumptuous ocean liners—*to*

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MATHIS-BUILT HOUSEBOATS

the most admired and desired of floating craft. Nowhere else can such ease and comfort be enjoyed in so beneficial and congenial an atmosphere.

A Mathis-built Houseboat goes anywhere—as thoroughly at home at sea as in the shallow inland streams. With the change of seasons, the many Mathis-built Houseboats—the *comfort* fleet—are on the move following the course of the medium, pleasant temperature, and proving their absolute seaworthiness.

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Specialists in 40 to 120 feet Cruisers and Houseboats

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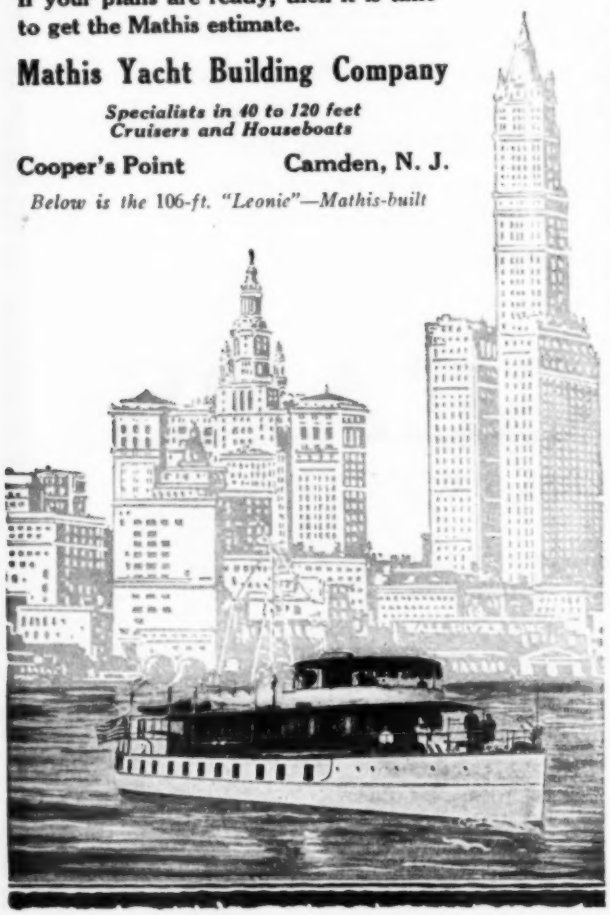
Below is the 106-ft. "Leonie"—Mathis-built



South America As a Market for Marine Motors

(*Continued from page* 124)

Argentina, $7,541 from France, and the balance $4,203 from all other countries. The figures do not tell the whole tale, for of the amount that came from the Argentine Republic a goodly portion was reshipment goods from the United States, having first been imported into Argentine and then resold to Chile.

Colombia has not been a promising market for American, or for that matter, any motors driven by gasoline or kerosene in the past, but it gives great promise at this time because of the recent discovery of new sources of oil in the country. This will tend to cheapen fuel prices and serve as an encouraging factor. It had been possible to obtain gasoline and Pennsylvania distillate, from a refinery at Cartagena, but the prices were high and the natives preferred to stick to their old fashioned sailing craft, or hand powered vessels, except where river boats were concerned. These latter for the most part burned wood cut on the banks of the streams and secured at slight expense.

Whatever internal-combustion engines are sold in the country, however, are of American manufacture. In many cases they are used far in the interior where fuel is difficult to obtain. Where wood is cheap, however, and accessible, steam engines are used. There is no way of approximating the number of internal-combustion engines in use in the country, as the majority of purchases have been made direct by the user, either from the manufacturer or from a commission house in New York; but the total is very small in comparison with the size and population of Colombia.

In packing for shipment into the interior it should be remembered that mule back transportation is often necessary, and packages should be of a size to facilitate this method of transport. It would be advantageous to have large flywheels split. In order to foster the demand which will arise when fuel becomes cheap, the manufacturer should advertise liberally. This can best be done by his agents who, being in the country, are in a position to know the best methods. Agents should be appointed by a traveling representative, after a careful survey of the field.

Ecuador having native supplies of fuel oil, offers a fair market for internal-combustion engines, but the experience of the natives with crude oil burning engines has not been satisfactory on the whole and one finds that any number of motors of this type have been converted into kerosene and gasoline burning engines. This argues well for the future sale of gasoline and kerosene motors in the country. Workboats had been equipped with crude oil burners only to give such unsatisfactory performances that changes to gasoline and kerosene were hurriedly made. One type of a certain make which has a number of its motors up to 60 h.p. in use, has given satisfactory service when proper precautions as to filtering and settling the oil have been taken.

The engine that would meet with the readiest sale in Ecuador is one that would work steadily without pounding at full load, and in sizes from 6 h.p. up, as most of the craft for which marine motors would be required are comparatively small. As soon as the oil from the wells now being drilled is available, the settling process can perhaps be eliminated altogether or, at any rate, considerably shortened, which would make a better market for crude oil burning motors. This would not affect the sale of gasoline and kerosene engines, but simply supplement motor sales in general. A marine engine would also meet with a good sale provided the weight could be kept down to 120 pounds per h.p. or thereabouts in sizes of 20 to 50 h.p., as there are over one hundred power boats in Guayaquil alone using engines of about this power; but, as they are of no great draft, the speed would have to be at least 350 r.p.m. in order to keep the diameter of the propeller within the limit necessitated by the draft. Some of the oil on sale in Guayaquil contains up to fifteen per cent of gasoline.

The opportunities in Peru for internal combustion engines not only include the gasoline and kerosene type but the crude oil burners as well, for gasoline and kerosene are very expensive. The Diesel or semi-Diesel type of crude oil burners would have the readiest sale of that type, and the present is a particularly good time for American manufacturers of internal combustion engines of all types. Firms that are disinclined to send representatives or to appoint agents in the ports of Peru, may send catalogs printed in Spanish to the office of the American Trade Commissioner, Carlton Jackson, care of the United States Embassy, Lima, Peru.

At all of the ports of the Peruvian coast, ships are served by lighters towed by gasoline boats. Every passenger and every pound of freight are handled by them, except in very rare instances of the use of the pier at Callao. The motors used range in power from 6 or 8 h.p. to 50 or 60 h.p. At the open roadsteads, characteristic of the Peruvian coast, strong seaworthy hulls are essential, with fairly powerful engines.

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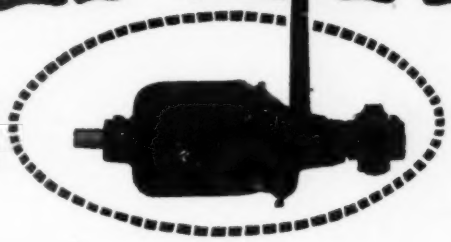
STANDARD REVERSE GEAR



More than 30,000 Standard Reverse Gears now in service throughout the world guarantee the satisfaction you will get if you put a Standard in your boat, or specify a Standard gear with your next engine. We never could have built and sold so many of them if the Standard was not an unusually dependable reverse gear.

When you buy a Standard you get all the desirable qualities a first class gear should have. It is completely enclosed so it can't throw oil in your boat, or spatter your clothes; running constantly in a bath of oil, it is impossible for the gears or bearings to wear and grow noisy. It is strong, light, compact, simple in design, quiet in action and as durable, dependable and trouble proof as any reverse can be built.

The materials used in Standard Gears are the best money can buy. Our machinists learned their trade making parts for Detroit's most expensive automobiles, and the same standards of perfection are maintained in this plant. You won't make any mistake if you choose a Standard.

Prices $42.00 to $147.00

including Ball Bearing Thrust Collar and Coupling. Immediate shipment from stock on all size gears. Write today for new Catalog.

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In the Wake of the World's Shipping

Through the Panama Canal, among great liners flying the flags of every seafaring nation, small craft powered by Evinrude Motors journey back and forth on official business.

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DETACHABLE MOTOR FOR WATERCRAFT

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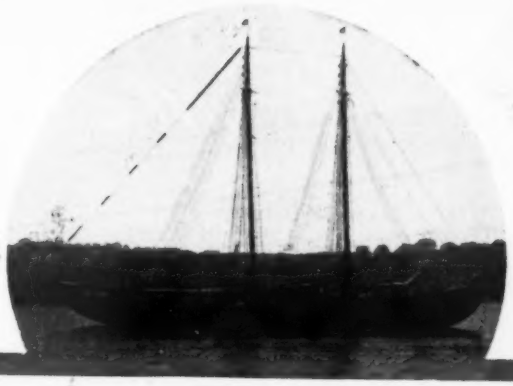
FRISCO STANDARD

Heavy Duty Marine Engines

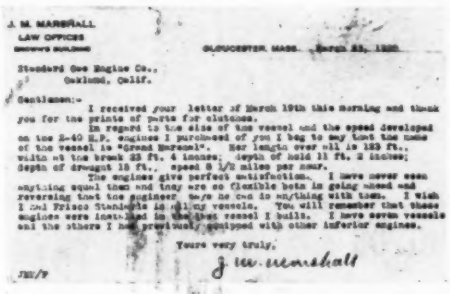


Standard on Every Fishing Bank

FISHING SCHOONER "GRAND MARSHALL" OF GLOUCESTER

Owned by J. M. Marshall.—She is 128 ft. O.A., 23 ft. beam, and is powered with two 40 h.p. Frisco Standard Engines.

READ THESE TWO LETTERS FROM HER OWNER CAREFULLY



J. M. MARSHALL
LAW OFFICES
BROWN'S BUILDING
GLOUCESTER, MASS. March 23, 1920.

Standard Gas Engine Co.,
Oakland, Calif.

Gentlemen:-

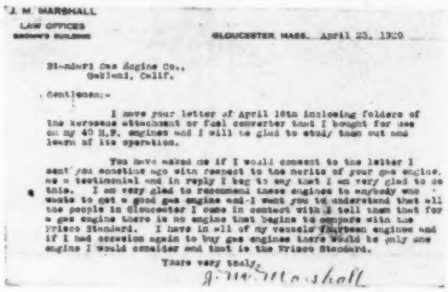
I received your letter of March 19th this morning and thank you for the prints of parts for clutches.

In regard to the size of the vessel and the speed developed on the 2-40 H.P. engines I purchased of you I beg to say that the name of the vessel is "Grand Marshall". Her length over all is 128 Ft., width at the brunk 23 ft. 4 inches; depth of hold 11 ft. 2 inches; depth of draught 13 ft., speed 9 1/2 miles per hour.

The engines give perfect satisfaction. I have never seen anything equal them and they are so flexible both in going ahead and reversing that the engineer says he can do anything with them. I wish I had Frisco Standards in all my vessels. You will remember that these engines were installed in the first vessel I built. I have seven vessels and the others I had previously equipped with other inferior engines.

Yours very truly,
J. M. Marshall

JMM/F



J. M. MARSHALL
LAW OFFICES
BROWN'S BUILDING
GLOUCESTER, MASS. April 23, 1920

Standard Gas Engine Co.,
Oakland, Calif.

Gentlemen:-

I have your letter of April 16th inclosing folders of the kerosene attachment or fuel converter that I bought for use on my 40 H.P. engines and I will be glad to send them out and learn of its operation.

You have asked me if I would consent to the letter I sent you sometime ago with respect to the merits of your gas engine, as a testimonial and in reply I beg to say that I am very glad to do this. I am very glad to recommend these engines to anybody who wants to get a good gas engine and I want you to understand that all the people in Gloucester I come in contact with I tell them that for a gas engine there is no engine that begins to compare with the Frisco Standard. I have in all of my vessels fourteen engines and if I had occasion again to buy gas engines there would be only one engine I would consider and that is the Frisco Standard.

Yours very truly,
J. M. Marshall

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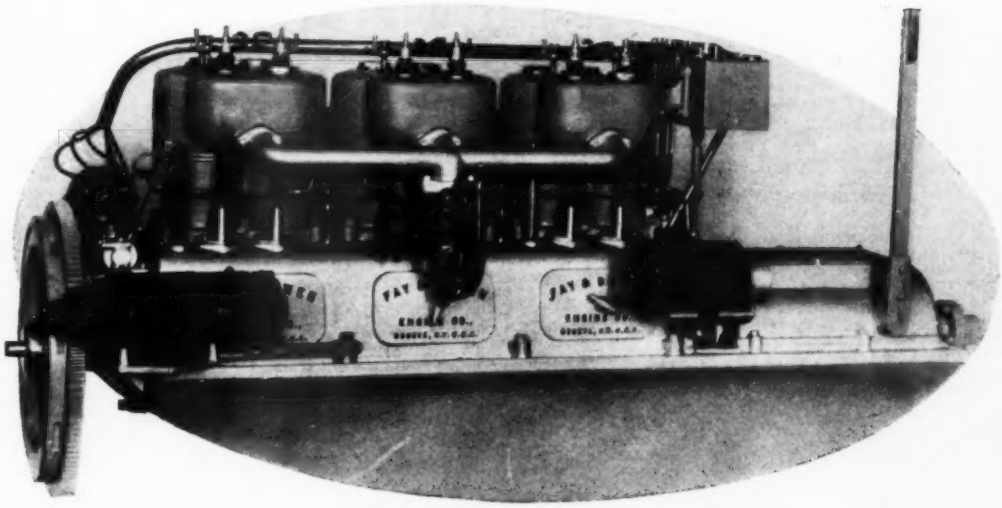

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With Electric Starter

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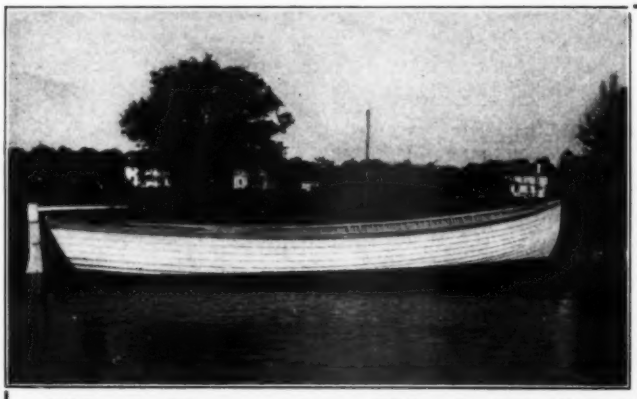

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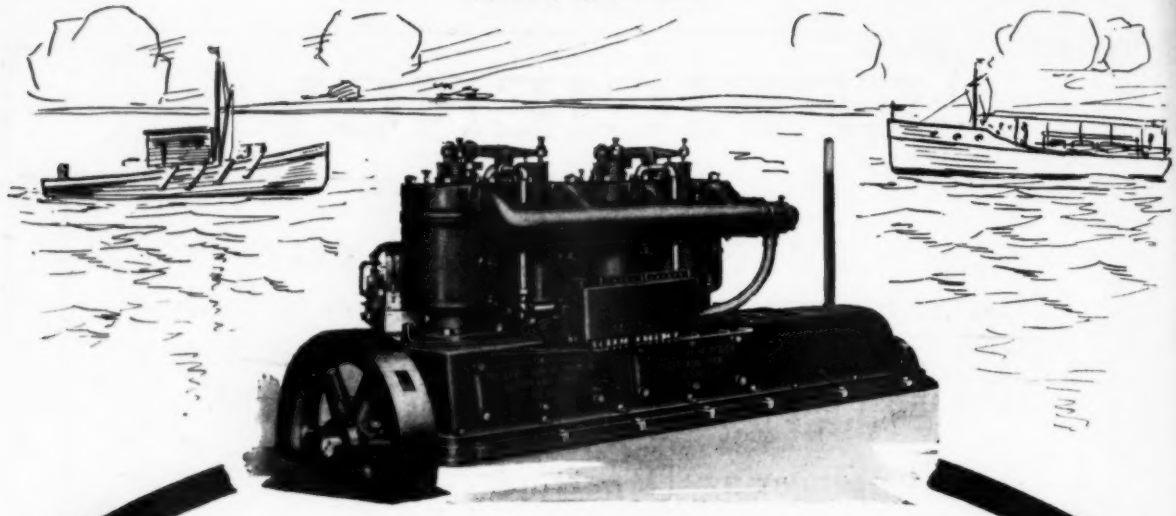

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